23 NOV. 92

REPORT

ON THE

HEALTH OF THE CITY

OF

BIRMINGHAM,

FOR THE YEAR 1891,

ALSO,

ON THE PROCEEDINGS TAKEN UNDER THE ACT FOR THE

PREVENTION OF ADULTERATION

OF ARTICLES OF FOOD AND DRINK,

BY

ALFRED HILL, M.D., F.I.C.,

Past-President of the Society of Medical Officers of Health;
Past-President of the Society of Public Analysts;
Examiner in Public Health to the University of Aberdeen;
Fellow of the Sanitary Institute;
Medical Officer of Health and Analyst to the City.

PRINTED BY ORDER OF THE HEALTH COMMITTEE.

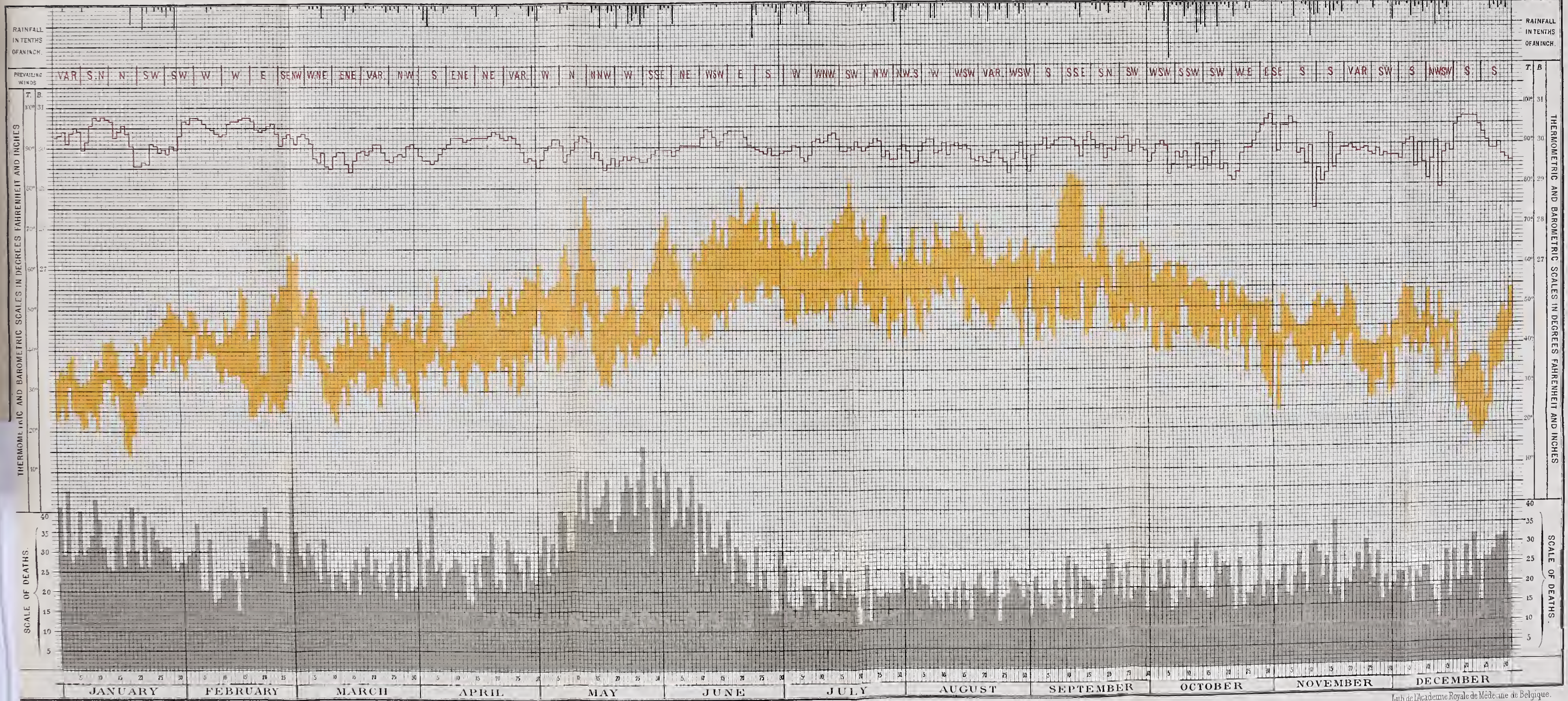
BIRMINGHAM:
GEO. JONES & SON, TOWN HALL PRINTING OFFICES, 87-89, EDMUND STREET.

With the

Medical Officer of Health's Compliments.

City of Birmingham.

Chart illustrating the relations of the number of deaths to the principal meteorological conditions on each day of the year 1891.



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MORTALITY: ▭ Deaths | METEOROLOGY: 🟨 Temperature (maximum and minimum) ——— BAROMETRIC PRESSURE (corrected and reduced to 32° Fahrenheit and sea level) ——— RAINFALL.

25 MAY. 92

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HEALTH DEPARTMENT,
THE COUNCIL HOUSE,
Birmingham, March 4th, 1892.

TO THE HEALTH COMMITTEE.

MR. CHAIRMAN AND GENTLEMEN,

Introductory Remarks.

In presenting my Annual Report upon the Health of the City for the year 1891—the nineteenth—I beg to make a few general remarks.

The Marriage-rate is only fractionally lower than in the previous year, and higher than at any other time since 1877.

The Birth-rate has undergone a satisfactory increase, being higher than any year since 1886.

The Death-rate of the City is the highest recorded during the past twelve years, excepting the year 1890, and this higher Death-rate is not peculiar to Birmingham, but is general. The increase is almost entirely attributable to Influenza and diseases of the Respiratory Organs, which appeared to be to a large extent connected with it, and aggravated by it. It is not upon children and young people that the disease has fallen, but upon persons of adult age, which fact shows that the general sanitary condition of the town, as judged by the best test of public health, viz., the Mortality at the early periods of life, was fairly satisfactory. But for the visitation of Influenza, the general Mortality would have compared favourably with the best of previous years.

Scarlet Fever has very much diminished, the cases and deaths being less than half as many as in the previous year.

A slight invasion of Smallpox took place, which, happily, owing to early information and action, was prevented attaining large proportions, and was successfully met.

In Typhoid Fever there was a marked increase of cases.

Diphtheria has exhibited a marked decline, and is as low as it has ever been.

An extension of the City boundaries was made in November, less than two months from the end of the year, and my Report refers to the City as it was before its enlargement. It may be stated, however, that in the enlarged City 16,166 Births were registered, giving a Birth-rate of 33·7 per 1,000; and 10,077 Deaths were recorded, equal to a Death-rate of 21·03 per 1,000. From Zymotic diseases there resulted 976 Deaths, equal to a Death-rate of 2·0 per 1,000. The Deaths included 7 from Smallpox, 107 from Measles, 95 from Scarlet Fever, 43 from Diphtheria, 303 from Whooping Cough, 81 from Fever, and 340 from Diarrhœa.

I.—VITAL STATISTICS.

Population.

The ordinary method of estimating the population of a town for any particular year is to assume that the rate of increase or decrease which held during the last intercensal period has continued unaltered since the taking of the most recent census. Thus, for all years between 1881 and 1891, the population of Birmingham has been estimated by increasing the known population of the City in 1881 at the same rate at which it was found to have increased during the ten years 1871 to 1881. I have frequently pointed out that this assumption, that the rate of increase in any ten years will continue during the following decennium, is certain to be very often incorrect, and this opinion has been strikingly confirmed by the results of the census taken in April last. The estimated population of Birmingham at the middle of 1891 was 469,003; the census enumeration showed the actual number of inhabitants to be about 429,906. That is to say, the estimate was nearly 40,000 in excess of the actual number. All the estimates of population since 1881 have, therefore, been erroneous, and all Birth and Death-rates calculated on them are equally fallacious.

It is not only in Birmingham that the census has revealed how great is the difference between the estimated and actual population. In many of the large towns the error is great, and in one, viz., Liverpool, it amounts to 100,000, or one-fifth of the entire population. Owing to this, the Death-rate in Liverpool in 1890 appeared to be 4 per 1,000 less than it actually was. It is quite impossible to collate vital statistics which will be of any value, unless the populations on which those statistics are based can be estimated with reasonable accuracy; and this cannot be done while so long an interval as ten years is allowed to elapse between one census and the next. To Medical Officers who take great pains to make their reports trustworthy and useful, it is very discouraging to find that, owing to a circumstance over which they have no control, their work in this department for the past few years is almost worthless.

Probably it will now be seen that if the census is to be made of real use for the purposes of sanitary science, it is necessary that at least the gross numbers living in various districts, and at different age-periods, should be ascertained not less often than once every five years.

Natural increase.

The excess of Births over Deaths, or the natural increase of population in the City during the year 1891, was 5,306, or 1·23 per cent. of the population.

Area. Density.

The area of the old City was 8,400 acres, and the mean density per acre, calculated on the corrected population, is 51·2.

Comparative statement of Death-rate, &c., in certain large towns.

In the subjoined statement will be found the Populations, Densities, and recorded Death-rates of Birmingham and several other towns for 1891 :--

	Estimated Population, 1891.	No. of Persons per Acre.	Recorded Death-rate.
London	4,221,452	56·5	21·4
Liverpool	517,116	99·3	26·9
Birmingham ...	**429,906**	**51·2**	**21·7**
Manchester ...	506,469	39·6	26·5
Sheffield	325,304	16·6	23·8
Leeds	369,099	17·1	22·8
Salford	198,717	38·4	25·9
Newcastle-on-Tyne	187,502	34·9	23·7
Norwich	101,316	13·6	19·2
Bristol	222,049	61·8	20·8
Glasgow	567,143	92·8	—
Dublin	347,312	14·0	—

Elevation. Geological position.

Birmingham has the advantage of a high situation, being 616 feet at its highest part above sea level. It stands mostly on sandy and gravelly soil, the porosity of which is a great advantage.

MARRIAGES.

Marriages.

From Returns supplied me by Messrs. Cooper, Hastings, and Docker (Superintendent-Registrars for Birmingham, Aston, and Edgbaston Parishes respectively), I find that the number of Marriages in the City during 1891 was 4,120, against 4,140 in 1890 ; 3,788 in 1889 ; and 3,634 in 1888. The Marriage-rate for the year is 19·2, against 19·4, 17·9, and 17·3 in the three preceding years. The increase in the Marriage-rate during 1890 has not been quite maintained, but the rate is still much higher than it has been in recent years.

Marriage-rate.

The number of Marriages and the Marriage-rate for the past ten years are as follows :—

Year	1882	1883	1884	1885	1886	1887	1888	1889	1890	1891
No. of Marriages..	3,581	3,634	3,435	3,276	3,462	3,452	3,634	3,788	4,140	4,120
Rate per 1,000 of the Population	17·7	17·9	16·8	15·9	16·7	16·5	17·3	17·7	19·4	19·2

BIRTHS.

Births.

Birth-rate.

The Births registered during 1891 numbered 14,623, and comprised those of 7,334 males and 7,289 females. In the three preceding years the numbers were 14,076, 14,001, and 13,673 respectively. The Birth-rate for the year is 34·0, and is the highest recorded during the past five years, though, prior to 1887, the rates were invariably higher than that of last year. The striking disparity between the Birth-rates of the first seven years of my tenure of office, and those of the last few years, is seen at once from the following Table, which gives the number of Births registered in each quarter and year since 1873:—

		1st Quarter.	2nd Quarter.	3rd Quarter.	4th Quarter.	Year.	Birth-rate.
1873	...	3,741	3,564	3,378	3,814	14,497	40·8
1874	...	3,814	3,871	3,493	3,710	14,888	41·2
1875	...	3,787	3,737	3,581	3,757	14,862	40·6
1876	...	4,140	3,924	3,803	3,949	15,816	42·5
1877	...	4,296	4,009	3,769	3,927	16,001	42·4
1878	...	4,139	4,096	3,849	3,880	15,964	41·7
1879	...	4,124	3,912	3,723	4,087	15,846	40·0
1880	...	3,964	4,104	3,572	3,471	15,111	38·3
1881	...	3,965	3,754	3,560	3,590	14,869	37·0
1882	...	3,968	3,760	3,478	3,660	14,866	36·8
1883	...	3,975	3,814	3,460	3,452	14,701	36·1
1884	...	3,765	3,817	3,557	3,852	1,4991	35·9
1885	...	3,776	3,528	3,550	3,529	14,383	34·9
1886	...	3,697	3,623	3,524	3,438	14,282	34·4
1887	...	3,509	3,594	3,372	3,418	13,893	33·2
1888	...	3,522	3,436	3,470	3,245	13,673	32·5
1889	...	3,604	3,659	3,405	3,333	1,4001	33·0
1890	...	3,705	3,495	3,400	3,476	14,076	32·3
1891	...	3,826	3,794	3,531	3,472	14,623	34·0

Birth-rates of large towns compared.

The Birth-rates in some large English towns during the year are given below:—

28 large Towns.	London	L'pool	**Birm.**	Manch.	Leeds	Sheff'ld	Salf'd	N'castle	N'wich	Bristol
32·5	31·7	34·5	**34·0**	34·0	34·0	36·5	36·4	35·7	31·8	30·2

Three towns in the above list, viz., London, Norwich, and Bristol, have lower rates than our City; while the rate in twenty-eight large towns, as a whole, is also considerably less than our own.

VACCINATION.

Vaccination.

I have received from Messrs. Blanche, Knight, Stephens, and Johnson, returns of Vaccination in the City during the year ending June 30th, 1891. Copies of these returns are given in Table X. in the Appendix. I had, in my last Annual Report, to call attention to the increased neglect of Vaccination, and the returns for the past year show a further retrogression.

In Birmingham Parish.

In Birmingham Parish 8,229 Births were registered, and 472 of the children, or 5·7 per cent., were lost sight of. This percentage is higher than in any previous year. Even this large percentage is, however, exceeded by the figures for Aston Parish. There can, I think, be little doubt that the large and increasing number of children who escape Vaccination must be due to wilful and culpable neglect on the part of the parents, and the teachings of Anti-Vaccinators.

In Aston Parish.

In Aston Parish the proportion of successful Vaccinations is lower than in any of the previous ten years, while the number of cases lost sight of is the highest, with one exception, during the same period. In both these particulars the year's record is very unsatisfactory.

In Edgbaston Parish.

In Edgbaston Parish, although the returns are, as usual, better than those for Birmingham and Aston, yet the same unsatisfactory features, viz., a decrease in successful Vaccinations, and an increase in cases not traced, are to be found.

Table of comparison of Vaccination.

The data on which my remarks are based will be found in the Table of Percentages given below :—

PARISH.	Year.	Vaccinated.	Died before Vaccination.	Removed to places unknown.	Unfit, insusceptible, or otherwise.
Birmingham	1882	88·9	9·2	1·0	0·9
	1883	87·1	10·2	1·3	1·4
	1884	87·2	9·7	1·4	1·7
	1885	84·1	11·2	2·1	2·6
	1886	83·7	10·6	2·6	3·1
	1887	83·9	11·0	2·7	2·4
	1888	83·0	10·2	4·2	2·6
	1889	83·9	10·1	4·0	2·0
	1890	81·3	11·0	5·3	2·4
	1891	79·8	12·3	5·7	2·2
Aston (Borough portion)	1882	81·8	9·3	6·4	2·5
	1883	82·4	9·5	5·2	2·9
	1884	82·4	11·4	3·7	2·5
	1885	82·5	11·1	3·3	3·1
	1886	82·1	10·8	3·7	3·4
	1887	81·4	11·2	4·1	3·3
	1888	79·8	11·7	4·5	4·0
	1889	78·4	11·9	4·5	5·2
	1890	78·7	10·5	4·6	6·2
	1891	75·6	13·2	6·3	4·9
Edgbaston	1882	86·1	7·3	3·6	3·0
	1883	91·1	6·7	0·9	1·3
	1884	89·2	7·5	1·1	2·2
	1885	89·0	8·4	0·7	1·9
	1886	87·1	7·9	0·9	4·1
	1887	85·8	9·5	2·0	2·7
	1888	88·8	5·0	1·0	5·2
	1889	86·8	5·8	3·4	4·0
	1890	84·8	6·5	1·9	6·8
	1891	84·2	9·2	2·2	4·4

The recent introduction of Smallpox into the town should serve to show that, although Birmingham has for several years been exempt from the disease in an epidemic form, it would be most unwise to relax any efforts that are being made to secure the most perfect protection possible against it.

DEATHS.

Deaths.

Death-rate.

The Deaths registered during the year numbered 9,317, and comprised those of 4,795 males, and 4,522 females. They give a Death-rate of 21·67 per 1,000, against 21·97, 19·70, and 18·60 respectively in the preceding three years. The Death-rate is a little lower than in 1890, but higher than in any other year since 1879.

In the following Table will be found the estimated population, mean density, Birth-rate and Death-rate of the City for the past twenty-seven years :—

Year.	Population Estimated in the middle of each year.	Density. Persons per acre.	Births.	Deaths.	Annual Rate per 1,000 living.	
					Births.	Deaths.
1865	The Estimate of Population in these years is not to be relied on.	—	12,699	8,014	38·9	24·5
1866		—	12,877	8,042	38·5	24·0
1867		—	13,029	8,318	38·0	25·6
1868		—	12,992	8,548	36·3	25·9
1869		—	12,779	7,737	35·5	23·1
1870		—	12,922	7,805	35·0	23·0
1871	344,980	41·1	13,443	8,594	39·0	24·9
1872	350,164	41·7	14,123	8,048	40·5	23·1
1873	355,540	42·4	14,497	8,990	40·8	24·8
1874	360,892	43·0	14,888	9,665	41·2	26·8
1875	366,325	43·6	14,862	9,668	40·6	26·3
1876	371,839	44·3	15,816	8,330	42·5	22·4
1877	377,436	44·9	16,001	9,038	42·4	23·9
1878	383,117	45·6	15,964	9,662	41·7	25·2
1879	388,884	46·3	15,846	8,650	40·0	21·8
1880	394,738	47·0	15,111	8,088	38·3	20·5
1881	401,460	47·8	14,869	7,938	37·0	19·8
1882	404,218	48·1	14,866	8,425	36·8	20·8
1883	406,995	48·5	14,701	8,714	36·1	21·4
1884	409,791	48·8	14,991	9,043	35·9	21·6
1885	412,606	49·1	14,383	8,156	34·9	19·8
1886	415,440	49·5	14,282	8,499	34·4	20·5
1887	418,294	49·8	13,893	8,536	33·2	20·4
1888	421,167	50·1	13,673	7,835	32·5	18·6
1889	424,060	50·5	14,001	8,352	33·0	19·7
1890	426,973	50·8	14,076	9,561	32·3	22·0
1891	429,906	51·2	14,623	9,317	34·0	21·7

Comparative Death-rate of Birmingham and large towns.

It is some satisfaction to find that the causes of the high Death-rate are not local, but general, and such as have affected not Birmingham alone, but also the other large towns. This is clearly shown by the following Table :—

Death rates in large towns.

	Twenty large English Towns.	London	L'pool	BIRM.	Manch.	Leeds	Sheff'ld	Salford	N'castle	Norw'h	Bristol
1891...	22·3...	21·4	26·9	**21·7**	26·5	22·8	23·8	26·0	23·7	19·2	20·8
1890...	22·2...	21·4	27·5	**22·0**	30·5	22·6	25·9	27·5	23·0	21·0	20·5
1889...	19·8...	18·3	24·9	**19·7**	26·7	22·1	21·5	24·6	22·7	18·3	18·3
1888...	19·8...	19·2	23·1	**18·6**	26·1	20·6	21·1	24·9	18·8	20·1	17·5
1887...	21·3...	20·2	26·4	**20·4**	28·7	21·1	22·0	25·5	23·3	20·4	21·0
1886...	21·3...	20·5	26·1	**20·5**	26·3	21·9	20·1	24·8	20·8	24·4	19·8
1885...	20·8...	20·1	25·6	**19·8**	26·4	19·9	21·0	23·2	24·7	20·3	20·1
1884...	21·8...	21·6	26·6	**21·6**	26·3	24·1	23·0	23·9	22·2	21·2	19·0
1883...	21·8...	20·6	27·7	**21·4**	27·6	23·2	23·0	23·5	24·7	19·6	18·1
1882...	22·3..	21·4	27·0	**20·8**	26·8	23·2	21·7	23·8	22·8	20·6	19·3
1881...	21·7...	21·2	26·7	**19·8**	25·5	21·6	20·6	22·7	21·7	19·2	19·6
1880...	22·6...	22·2	27·3	**20·5**	25·4	21·0	21·1	25·9	22·0	24·7	20·1
1879...	23·2...	23·3	27·1	**21·8**	26·9	22·6	21·3	24·9	23·6	22·0	21·1
1878...	24·4...	23·5	29·4	**25·2**	27·9	23·8	25·0	25·6	23·8	24·6	21·4
1877...	22·8...	21·9	26·5	**23·9**	27·4	22·3	21·9	25·1	22·4	21·0	21·8
1876...	23·6...	22·3	27·6	**22·4**	29·2	25·1	24·3	31·9	22·8	21·9	22·6
1875...	25·4...	23·7	27·5	**26·3**	29·9	26·4	24·8	31·5	26·1	24·5	26·8
1874...	25·4...	22·5	32·0	**26·8**	30·4	28·7	26·9	29·6	29·2	23·5	22·7
1873...	24·4...	22·5	25·9	**24·8**	30·1	27·6	25·8	29·3	30·1	21·5	23·1

It will be seen that the Death-rate for Birmingham exceeds the Death-rates of London, Bristol, and Norwich; but is below the mean of the twenty large towns, and below the rates for Liverpool, Manchester, Sheffield, Leeds, Salford, and Newcastle. Not only are the Death-rates in the large towns high, but the rate for the whole of England is higher than in any year of the decennium 1881–90.

Cause of increased Mortality.

From what has been said it is evident that general causes must be looked to in order to account for the comparatively heavy Mortality of the year. First and foremost of these causes is the severe epidemic of Influenza which passed over the country in the spring quarter. To this, with its accompanying Mortality from Respiratory Diseases, a great share of the excessive Death-rate must be attributed. In addition to this, the severe weather of the first quarter caused many Deaths from chest affections. Particulars of the visitation of Influenza are given on pages 21–23. Although the epidemic was practically confined to the second quarter, its effect was so great as to account for the rise in the Mortality of the whole year.

Discrepancy between Registrar General's and own figures.

If the Mortality figures given by the Registrar-General are compared with my own, it will be found that a discrepancy exists between them. This is owing to the fact that the Registrar-General debits Birmingham with the deaths of paupers belonging to the town who die in Erdington and King's Norton Workhouses, while making no allowance for non-residents who die in Hospitals in the City. My experience shows that the two sources of error about counterbalance each other, and I therefore keep to my plan of treating of the actual numbers of deaths registered in the City, instead of adopting the Registrar-General's method.

Movements in the Death-rate during each quarter of the year.

The Deaths of males and females, and the total Death-rate during each quarter of the year, have been as under :—

	1st Quar.	2nd Quar.	3rd Quar.	4th Quar.	Total 1891.	Total 1890.	Total 1889.	Total 1888.	Total 1887.
Total ...	2,574	2,932	1,757	2,054	9,317	9,561	8,352	7,835	8,536
Males ...	1,317	1,494	917	1,067	4,795	4,945	4,343	4,105	4,382
Females ...	1,257	1,438	840	987	4,522	4,616	4,009	3,730	4,154
Death-rate	23·95	27·28	16·35	19·11	21·67	21·97	19·70	18·60	20·41

The Mortality in the first quarter was heavy, owing to a large number of Deaths from Respiratory Diseases, particularly Pneumonia. In the second quarter the occurrence of Influenza unfortunately raised the Death-rate to an unprecedentedly high level. The third quarter was characterised by cool weather, and as a consequence the Diarrhœal Mortality was slight, and the Death-rate one of the lowest ever recorded. The Death-rate in the fourth quarter was a fairly normal one, and requires no special comment.

Chart.

Appended to my Report is a Chart, showing the annual rate of Mortality to which the Deaths registered week by week were equivalent, together with the average age at Death for the week. The year opened with higher Death-rates than usual, and these continued throughout the first quarter. At the end of April the terrible effects of the Influenza epidemic began to show themselves. The Death-rate rose to an altogether unprecedented level, and the fact that the Mortality occurred chiefly in elderly people is plainly to be seen in the great increase in the average age at Death. After the end of May the Death-rate fell rapidly, and continued throughout the next four months at an unusually low level, the summer being characterised by a comparatively slight Diarrhœal Mortality, and the average age at Death remaining in consequence much higher than usual. During the fourth quarter the Death-rate was fairly satisfactory; but it should be pointed out that the figure for the last week of the year is not to be taken as indicating an excessive Mortality in that week, but is largely due to the delay which occurred in registering Deaths which took place in the previous week—a delay occasioned by the Christmas holidays.

Mortality in Institutions.

The Deaths registered during the year included 1,621 which occurred in large public Institutions, 862 of them being in the Workhouse. They are equal to a rate of 3·8 per thousand, or, excluding those in the Workhouse, 1·8 per thousand.

Distribution of Deaths among Registration Sub-Districts.

The distribution of the Deaths over the various Registration Sub-Districts, excluding those in Institutions, which are given separately, is as follows :—

Registration Sub-Districts.	1st Quar.	2nd Quar.	3rd Quar.	4th Quar.	Total Deaths 1891.	Total Deaths 1890.	Total Deaths 1889.	Total Deaths 1888.	Total Deaths 1887.
Ladywood ...	274	305	170	213	962	1,017	930	864	982
St. Thomas ...	163	192	113	107	575	648	561	504	632
St. Martin ...	228	234	139	170	771	830	703	678	779
St. George ...	373	385	259	266	1,283	1,378	1,120	1,120	1,239
All Saints ...	220	242	156	182	800	859	805	746	771
Deritend ...	439	533	289	384	1,645	1,715	1,502	1,395	1,499
Duddeston ...	392	402	262	315	1,371	1,250	1,172	1,143	1,148
Edgbaston ...	82	106	46	55	289	292	262	220	254
Children's Hosp.	34	15	18	17	84	80	65	78	83
Queen's „	39	33	33	55	160	174	151	137	178
General „	81	89	58	83	311	306	255	245	254
City „	14	13	23	27	77	173	113	23	24
Workhouse ...	207	326	162	167	862	735	627	606	619
Lunatic Asylum	28	57	29	13	127	104	86	82	74

The Deaths in Registration Sub-Districts, exclusive of those in large Institutions, give Death-rates per 1,000 of the population as follows:—Ladywood, 17·1; St. Thomas, 17·3; St. Martin, 19·9; St. George, 20·8; All Saints, 14·5; Deritend, 17·1; Duddeston, 21·5; Edgbaston, 11·8. These Death-rates can only be taken as approximate, but they appear to show that Duddeston, St. George's, and St. Martin's are considerably the most unhealthy Sub-Districts in the town.

Distribution of Deaths among the Wards

The next Table shows the Deaths in each Ward of the City during the last five years, disregarding those in public institutions:—

	1st Quar.	2nd Quar.	3rd Quar.	4th Quar.	Total 1891.	Total 1890.	Total 1889.	Total 1888.	Total 1887.
Rotton Park ...	151	144	73	107	475	397	455	463	495
All Saints... ...	157	191	148	142	638	735	645	535	544
Ladywood	143	166	88	103	500	497	450	422	505
St. Paul	78	94	41	67	280	364	302	309	343
St. George... ...	139	151	84	91	465	471	414	385	421
St. Stephen ...	132	157	111	105	505	550	410	461	478
St. Mary	116	102	69	80	367	397	359	303	360
St. Bartholomew ...	192	146	94	153	585	726	497	487	568
Market Hall ...	70	87	51	52	260	283	205	213	258
St. Thomas ...	93	121	69	68	351	394	378	328	393
St. Martin... ...	101	124	73	56	354	372	363	333	395
Edgbaston... ...	105	118	58	66	347	347	294	252	305
Deritend	129	194	95	117	535	519	490	451	497
Bordesley	215	255	145	199	814	836	765	701	718
Duddeston... ...	160	141	104	126	531	460	496	480	472
Nechells	190	208	131	160	689	641	532	541	552

Ward Populations

I have no means of ascertaining the populations of the various Wards, and cannot therefore give the Death-rates in them. The above figures are of use, however, for comparing one year with another, though not for contrasting Ward with Ward. The past year seems to have been a favourable one in St. Paul's, while in Duddeston, Nechells, Bordesley, and Deritend the Mortality has been specially large.

Distribution of Deaths among the ætal periods.

The Deaths have been distributed over the six ætal periods as follows :—

	1st Quar.	2nd Quar.	3rd Quar.	4th Quar.	Total 1891.	Total 1890.	Total 1889.	Total 1888.
Under 1 year of age ...	639	628	581	656	2,504	2,593	2,396	2,105
Between 1 and 5 years	384	371	213	291	1,259	1,586	1,395	1,292
,, 5 ,, 20 ,,	136	138	101	129	504	611	489	444
,, 20 ,, 40 ,,	319	371	226	229	1,145	1,127	977	932
40 ,, 60 ,,	489	644	308	339	1,780	1,668	1,405	1,366
At 60 years and upwards	607	780	328	410	2,125	1,976	1,690	1,696

It will be seen that at all ages under twenty years the Mortality is very little above the average. It is almost entirely in adults that the excessive Death-rate has occurred. The Mortality in Children is one of the safest tests of the sanitary and social condition of a population, and it is satisfactory to find that, in comparison with the general Mortality, it was so low last year.

Deaths among Males at certain ætal periods.

The two following Tables are interesting as showing the relative numbers of Deaths of males and females at various age periods :—

MALES.	1891.	Average, 1886–1890	1890.	1889.	1888.	1887.	1886.
All ages...	4,795	4,436	4,945	4,343	4,105	4,382	4,406
Under 5 years	2,007	2,044	2,205	2,036	1,811	2,002	2,165
5 to 20 ,, ...	228	262	297	268	226	258	259
20 to 40 ,, ...	605	520	589	508	493	528	483
40 to 60 ,, ...	961	773	898	723	771	757	719
60 years and upwards	994	837	956	808	804	837	780

Among males the Deaths last year at all ages exceeded the quinquennial average by 359. In children under five years old, and in young people between five and twenty years, the Deaths were below the average. At the three other age periods the Mortality last year was in excess, especially so in the period between forty and sixty years.

Deaths among Females at certain ætal periods.

FEMALES.	1891.	Average, 1886–1890	1890.	1889.	1888.	1887.	1886.
All ages	4,522	4,120	4,616	4,009	3,730	4,154	4,093
Under 5 years	1,756	1,785	1,974	1,755	1,586	1,826	1,784
5 to 20 ,, ...	276	251	314	221	218	249	255
20 to 40 ,, ...	540	472	538	469	439	469	447
40 to 60 ,, ...	819	681	770	682	595	667	688
60 years and upwards	1,131	931	1,020	882	892	943	919

In females, last year's Mortality was lower than the average in children under 5 years, but higher at all other ages. The age period, 40 to 60 years, does not show nearly so great an increase in females as in males.

Average age at Death.

The average age at Death in the past two years has been as follows :—

	1891.	1890.
First Quarter ...	34 years and 0 months.	31 years and 0 months.
Second „ ...	34 „ 9 „	26 „ 8 „
Third „ ...	26 „ 10 „	20 „ 11 „
Fourth „ ..	26 „ 9 „	28 „ 1 „
Whole Year ...	30 „ 5 „	27 „ 10 „

The mean age at Death last year was exceptionally high owing to the extraordinary number of Deaths in elderly people during the epidemic of Influenza in the second quarter, and the very slight Mortality from Infantile Diarrhœa during the summer quarter. The weekly variations in the average age are shown on a Chart in the Appendix.

Chart.

INFANT MORTALITY.

Infant Mortality.

The Deaths of Infants under one year old numbered 2,504, and bore the proportion of 171 to every 1,000 Births during the year. This proportion is very little higher than the average, and in face of the heavy total mortality it is fairly low.

Percentages of Infant Deaths on Births.

From the Table below, which shows the percentages of Infant Deaths on Births in some large towns, it will be seen that Birmingham occupies a moderately good position in comparison with them :—

	Twenty large English Towns.	London.	L'pool.	BIRM.	Manch.	Leeds.	Sheff'ld.	Salford.	N'castle.	Norw'h.	Bristol.
1891...	16·6...	15·4	18·8	**17·1**	19·2	17·7	17·0	19·4	17·4	15·9	14·6
1890...	17·1...	16·3	19·5	**18·4**	18·7	17·2	19·5	19·9	16·9	18·0	15·1
1889...	15·9...	14·1	18·8	**17·1**	17·6	17·7	17·4	18·1	17·5	16·3	14·6
1888...	15·4...	14·6	16·8	**15·4**	17·6	17·3	17·8	18·4	13·7	16·3	12·3
1887...	16·7...	15·8	18·6	**17·8**	19·1	17·2	17·7	19·5	17·4	15·8	14·9
1886...	16·8...	15·9	18·8	**17·6**	18·3	18·1	16·8	19·8	15·5	20·2	14·9
1885...	15·4...	14·8	17·4	**15·7**	17·5	15·5	16·4	17·4	17·2	13·5	15·2
1884...	16·7...	15·5	19·4	**17·4**	18·3	18·4	17·2	18·4	15·6	18·7	14·3
1883...	15·9...	14·6	18·6	**15·9**	17·7	16·7	16·3	17·1	16·7	15·1	13·4
1882...	16·1...	15·1	17·8	**16·5**	17·9	18·0	16·5	17·8	16·6	16·9	14·2

Liverpool, Manchester, Leeds, Salford, and Newcastle exhibit a higher Infant Mortality than Birmingham. The Infantile Death-rates in Bristol, London, and Norwich are, however, much lower than ours.

High Infant Mortality in towns.

Over England and Wales as a whole the proportion of Infant Deaths to Births was last year 149 per 1,000. In the 28 large towns it was 167 per 1,000. Probably the chief factor in the causation of so great a disparity is the more widespread employment of married women away from home in industrial centres. This employment in itself must directly affect the children, but its indirect influence is still greater. During the day the children are sent out to be nursed; they are, of course, hand-fed, and too commonly innutritious, indigestible, starchy food is used instead of milk. As a result of such treatment a large proportion fail to reach their second year of life, and so swell the amount of Infantile Mortality.

Deaths under five years

The Deaths of Children under five years old numbered 3,763. The average for the past 19 years was 4,101.

Analysis of the Mortality in the City of Birmingham in each of the Nineteen Years, 1873 to 1891.

YEAR.	Deaths of Infants under 1 year.	Proportion of Deaths under 1 year to 1,000 Births.	DEATHS.				Annual rate per 1,000 living.			
			AT ALL AGES.		FROM ALL CAUSES		AT ALL AGES.		FROM ALL CAUSES.	
			From all Causes.	From Seven Zymotic Diseases.	Of Children under 5 years.	Of Persons over 60 years.	From all Causes.	From Seven Zymotic Diseases.	Of Children under 5 years.	Of Persons over 60 years.
1873	2627	181	8990	2042	4424	1521	24·8	5·6	12·4	4·3
1874	2688	178	9665	2652	4589	1459	26·8	7·3	12·7	4·4
1875	2957	196	9668	2145	4785	1590	26·3	5·9	13·0	4·3
1876	2537	160	8330	1336	3881	1441	22·4	3·6	10·4	3·9
1877	2628	164	9038	1576	4460	1521	23·9	4·2	11·8	4·0
1878	2766	170	9662	2421	5128	1506	25·2	6·3	13·4	4·0
1879	2385	150	8650	1251	4095	1686	21·8	3·2	10·5	4·3
1880	2601	172	8088	1324	4043	1397	20·5	3·4	10·2	3·5
1881	2212	150	7938	1128	3741	1506	19·8	2·8	9·3	3·8
1882	2452	165	8425	1413	3979	1459	20·8	3·5	9·8	3·6
1883	2338	159	8714	1306	3818	1704	21·4	3·2	9·4	4·2
1884	2611	174	9043	1681	4315	1597	21·6	4·0	10·3	3·8
1885	2253	157	8156	876	3408	1708	19·8	2·1	8·3	4·1
1886	2515	176	8499	1383	3949	1699	20·5	3·3	9·5	4·1
1887	2468	178	8536	1336	3828	1780	20·4	3·2	9·2	4·3
1888	2105	154	7835	875	3397	1696	18·6	2·1	8·1	4·0
1889	2396	171	8352	1191	3791	1690	19·7	2·8	11·3	4·0
1890	2593	184	9561	1297	4179	1976	22·0	3·0	9·6	4·5
Average 1873–90	2507	169	8731	1513	4101	1608	22·0	3·9	10·5	4·1
1891	2504	171	9317	923	3763	2125	21·7	2·1	8·8	4·9

Full details of the mortality in the year 1891 are given in Table A, on pages 26–28

SPECIFIED CAUSES OF DEATH.

Specified causes of Deaths.

The Deaths registered during 1891 were distributed among the eight chief classes of disease as shown below :—

Class	I.—Zymotic Diseases ...	1,239, or 13·3	per cent. of	total mortality.
„	II.—Parasitic Diseases ...	6, or 0·1	„	„
„	III.—Dietic Diseases ...	67, or 0·7	„	„
„	IV.—Constitutional Diseases	1,441, or 15·5	„	„
„	V.—Developmental Diseases	760, or 8·1	„	„
„	VI.—Local Diseases... ...	4,793, or 51·4	„	„
„	VII.—Violent Deaths ...	389, or 4·2	„	„
„	VIII.—Deaths from ill-defined and not specified causes	622, or 6·7	„	„

Comparing the distribution of the Mortality with that of the previous year, I find that the variations are generally slight, the most marked being in Class I. Zymotic Diseases, which in 1890 claimed 14·5 per cent. of the total mortality.

CLASS I.—*ZYMOTIC DISEASES.*

Zymotic Diseases.

This class includes Miasmatic, Diarrhœal, Malarial, Zoogenous, and Venereal Diseases, which had 1,239 Deaths attributed to them, equal to a Death-rate of 2·9 per 1,000 of the population. The

SEVEN PRINCIPAL ZYMOTIC DISEASES

Zymotic Death-rate.

were set down as the cause of 923 Deaths. This number is equal to a Zymotic Death-rate of 2·1 per 1,000, against 3·0, 2·8, and 2·1 in 1890, 1889, and 1888 respectively. No lower rate than 2·1 per 1,000 has ever been recorded in Birmingham during the past 19 years. The average of the rates for those 19 years is 3·8 per 1,000, or 1·7 above that of the past year. Although the year has been marked by a heavy total mortality, it is pleasing to find that so small a part of it has been caused by the diseases which sanitary science has been most successful in combating, and which are associated with unhygienic conditions, or with want of precautions against the spread of infection.

Zymotic Death-rates in large towns.

The Table below shows the Zymotic Death-rates for Birmingham and nine other towns during the past ten years :—

	Twenty large English Towns.	London.	L'pool.	BIRM.	Manch.	Leeds.	Sheff'ld.	Salford.	N'castle.	Norw'h.	Bristol.
1891...	2·4...	2·3	3·6	**2·1**	3·1	2·4	2·7	3·5	2·7	1·8	1·9
1890...	2·9...	2·9	4·7	**3·0**	4·0	2·4	3·7	4·7	1·8	2·9	2·1
1889...	2·8...	2·3	4·5	**2·8**	4·0	3·4	3·4	5·5	2·7	1·8	2 2
1888...	2·5...	2·6	3·4	**2·1**	3·1	2·7	3·7	4·2	1·3	2·6	1·3
1887...	3·3...	3·1	5·0	**3·2**	4·9	2·7	4·3	5·1	3·1	3·7	3·0
1886...	2·9...	2·8	4·1	**3·3**	3·0	3·4	2·5	4·3	2·3	3·6	2·2
1885...	2·8...	2·8	4·7	**2·1**	3·1	2·2	2·7	3·8	4·2	2·1	2·2
1884...	3·5...	3·4	5·5	**4·0**	3·6	4·9	4·2	4·6	3·1	3·3	1·8
1883...	2·9...	2·8	5·4	**3·2**	3·6	4·0	3·9	3.5	4·2	1·1	1·1
1882...	3·6...	3·5	5·2	**3·5**	3·7	3·4	2·8	4·0	3·3	2·5	2·3

It will be seen from the preceding Table that only two towns in the list—viz., Norwich and Bristol, have lower Zymotic Death-rates than our own. That of Leeds is identical with ours, while all the other towns have had a higher Zymotic Mortality than Birmingham.

DIARRHŒA

Diarrhœa.

occasioned 320 Deaths, including one set down to English Cholera, against 434, 465, and 305 in the three preceding years, and 484, the average number in the ten years 1881 to 1890. The Deaths from Diarrhœa are equal to a rate of 0·7 per 1,000, against 1·0, 1·1, and 0·7 in the three previous years. In the third quarter the rate was 1·6 per 1,000. It will be seen from these figures that the Diarrhœal Mortality of the year has been very small; during the last 20 years in fact it has been smaller on only two occasions. The Diarrhœal Mortality furnishes further proof that a high summer temperature, which was absent last year, is the great determining cause of Diarrhœa. But it must not be forgotten, as pointed out in my last Report, that there is a strong evidence that the disease is affected largely by filthiness of soil, air, and dwellings. It is therefore imperative, if the Diarrhœal Mortality is to be substantially reduced, that special efforts should be made to prevent the soakage of filth into the soil, and the pollution and stagnation of air around dwellings, as well as the occupation of houses in a filthy and unwholesome state.

Diarrhœal Death-rate.

Temperature in relation to Diarrhœa.

Other causes of Diarrhœa.

Infancy and Old Age in relation to Diarrhœa.

Of the 320 Deaths from Diarrhœa, 245, or 77 per cent., occurred in infants under one year of age, and 292, or 91 per cent., in children under five years. Of the remaining 28 Deaths, 14, or 50 per cent., were in persons over 60 years old.

WHOOPING COUGH

Whooping Cough.

caused 284 Deaths during the year, against 203 in 1890, and 259, the average of the ten years 1881 to 1890. From several circumstances it is difficult for Sanitary Authorities to take any steps to prevent this disease. The infection appears to be present before the disease can be recognised, and the contagion spreads so rapidly and to such a distance that isolation is hardly practicable. Moreover, the popular idea that all children must eventually have an attack, causes many persons to be quite careless as to the exposure of healthy children to the infection. Owing to the difficulties mentioned, no measures of a special character can be taken for preventing the spread of Whooping Cough, and in consequence the Mortality shows little reduction.

MEASLES.

Measles.

The Deaths from Measles numbered 105, against 329 in 1890, and 223, the average for the ten years 1881-90. As many as 45 Deaths occurred in the Duddeston Registration Sub-District, a number altogether out of proportion to its size. The disease was very prevalent during 1890, and no doubt this prevalence, by reducing the number of susceptible children, is largely accountable for the slight Mortality of the past year.

Map.

The distribution over the town of the fatal cases of Measles is shown on a Map appended to this Report.

SCARLET FEVER.

Scarlet Fever.

After the extensive prevalence of this disease during the last two years it is pleasing to record a marked reduction, the Deaths last year numbering 91, against 209 and 156 in 1890 and 1889, and 139, the average number in the ten years previous to 1891.

Scarlet Fever Death-rate

The Death-rate from Scarlet Fever was 0·21; in the twenty-eight large towns selected by the Registrar-General it was 0·18, so that the Birmingham rate is still slightly above that of the large towns as a whole.

The proportion of cases reported to Deaths registered during the year was 16 to 1, against 15 to 1 in 1890.

Map.

The Map at the end of my Report is marked with red spots, to show the streets in which fatal cases of Scarlet Feveroccurred.

FEVER.

Fever.

The Deaths attributed to Fever numbered 78, of which 77 were set down to Typhoid, 1 to Simple Continued, and none to Typhus Fever. This number compares unfavourably with 61 in 1890, only 44 in 1889, 64 in 1888, and 71, the average on the ten years prior to 1891. The Fever Death-rate is ·18 per 1,000, which is higher than in any year since 1887. It is still, however, slightly below the rate for twenty large towns as a whole.

Fever Death-rate.

DEATH-RATE FROM FEVER PER 1,000 OF THE POPULATION.

	Birmingham.	Twenty large towns.
1870	·63	·90
1871	·53	·78
1872	·54	·60
1873	·57	·59
1874	·56	·58
1875	·56	·52
1876	·40	·45
1877	·38	·42
1878	·38	·42
1879	·22	·29
1880	·21	·30
1881	·16	·31
1882	·22	·36
1883	20	·34
1884	·20	·28
1885	·19	·22
1886	·16	·22
1887	·19	·22
1888	·15	·20
1889	·10	·20
1890	·14	·19
1891	·18	·19

Map.

The positions of the fatal cases of Typhoid Fever are shown by blue crosses on the Map in the Appendix.

DIPHTHERIA

Diphtheria.

Diphtheria Death-rate.

was certified as the cause of only 38 deaths during the year, a lower figure than had before been recorded, and much below the average for the decennium 1881-1890, which was 52. The Death-rate from Diphtheria is ·09 per 1,000, which is equal to the rates in two previous years, but below those of all others.

DEATH-RATE FROM DIPHTHERIA PER 1,000 OF THE POPULATION.

	Birmingham.	Twenty Large Towns.
1873	·31	·09
1874	·21	·16
1875	·16	·12
1876	·16	·09
1877	·14	·09
1878	·22	·13
1879	·18	·13
1880	·13	·12
1881	·14	·15
1882	·12	·17
1883	·11	·17
1884	·10	·18
1885	·11	·17
1886	·18	·17
1887	·13	·18
1888	·09	·23
1889	·12	·28
1890	·14	·26
1891	·09	.23

Map.

The blue spots on the Map at the end of the Report indicate Deaths from Diphtheria.

SMALLPOX.

Smallpox.

After absolute immunity for over two years, the town has again been subjected to a slight outbreak of Smallpox. Altogether 47 cases occurred, and resulted in seven Deaths. Three of these were in infants under one year old, and not primarily vaccinated. Two others were in men whose vaccination was doubtful, no mark being visible, while the remaining two Deaths occurred in vaccinated persons, one being 34 and the other 44 years old.

Particulars of the outbreak, and of the steps taken to prevent its spread, are given on pages 13 and 14.

DEATHS AND DEATH-RATES FROM SMALLPOX PER 100,000 OF THE POPULATION IN 20 LARGE ENGLISH TOWNS.

Smallpox in large towns.

Town.	Population.	Deaths from Smallpox in the year 1890.	Rate per 100,000. 1891.	1890.	1889.	1888.
London	4,221,452	8	0·2	0·1	0·0	0·2
Brighton	115,606	0	0·0	0·0	0·0	0·0
Portsmouth ...	160,128	0	0·0	0·0	1·3	0·0
Norwich	101,316	0	0·0	0·0	0·0	0·0
Plymouth	84,464	0	0·0	1·2	0·0	0·0
Bristol	222,049	0	0·0	0·0	0·0	11·9
Wolverhampton ...	82,799	0	0·0	0·0	0·0	0·0
Birmingham ...	**429,906**	**7**	**1·6**	**0·0**	**0·0**	**0·0**
Leicester	142,581	0	0·0	0·0	0·0	0·0
Nottingham ...	212,662	0	0·0	0·0	0·0	5·8
Liverpool	517,116	2	0·4	0·0	0·2	0·2
Manchester.. ...	506,469	0	0·0	0·0	0·3	5·8
Salford	198,717	0	0·0	0·0	0·0	0·0
Oldham	132,010	0	0·0	0·0	0·0	11·1
Bradford	216,938	0	0·0	0·0	0·4	1·0
Leeds	369,099	1	0·3	0·0	0·3	5·1
Sheffield	325,304	0	0·0	0·0	0·0	130·3
Hull	200,934	0	0·0	1·5	0·0	10·1
Sunderland... ...	131,302	0	0·0	0·0	0·0	0·8
Newcastle-on-Tyne	187,502	0	0·0	0·0	0·0	0·0
In 20 towns ...	8,558,354	18	0·2	0·1	0·1	6·4

Cases and Deaths in the City from 1871.

The next statement shows the numbers of cases and Deaths from Smallpox in Birmingham in each quarter and year since 1871 :—

DATE.	Cases.		Deaths.	
1871.				
November 11th to end of year	359		43	
Total ...	——	359	——	43
1872.				
1st Quarter	798		96	
2nd „	632		92	
3rd „	355		67	
4th „	192		44	
Total ...	——	1,977	——	299
1873.				
1st Quarter	171		29	
2nd „	246		37	
3rd „	124		18	
4th „	253		38	
Total ..	——	794	——	122
1874.				
1st Quarter	757		123	
2nd „	1,303		196	
3rd „	1,059		165	
4th „	672		153	
Total ...	——	3,791	——	637
1875.				
1st Quarter	366		85	
2nd „	347		72	
3rd „	95		14	
4th „	16		2	
Total ...	——	824	——	173

Smallpox—*continued.*

DATE.	Cases.		Deaths.	
1876.				
1st Quarter	2		0	
2nd "	2		0	
3rd "	2		0	
4th "	5		0	
Total		11		0
1877.				
1st Quarter	7		1	
2nd "	20		3	
3rd "	20		3	
4th "	3		1	
Total		50		8
1878.				
1st Quarter	3		0	
2nd "	4		0	
3rd "	10		2	
4th "	10		3	
Total		27		5
1879.				
1st Quarter	1		0	
2nd "	0		0	
3rd "	3		0	
4th "	0		0	
Total		4		0
1880.				
1st Quarter	2		0	
2nd "	5		1	
3rd "	8		1	
4th "	3		0	
Total		18		2
1881.				
1st Quarter	5		5	
2nd "	9		1	
3rd "	2		0	
4th "	0		0	
Total		16		6
1882.				
1st Quarter	0		0	
2nd "	43		6	
3rd "	33		9	
4th "	13		2	
Total		89		17
1883.				
1st Quarter	48		7	
2nd "	152		9	
3rd "	567		54	
4th "	435		40	
Total		1,202		110
1884.				
1st Quarter	384		54	
2nd "	64		8	
3rd "	13		1	
4th "	10		1	
Total		471		64

Smallpox—*continued.*

DATE.	Cases.		Deaths.	
1885.				
1st Quarter	69		12	
2nd ,, ...	4		0	
3rd ,, ...	9		0	
4th ,, ...	2		0	
Total ...	——	84	——	12
1886.				
1st Quarter	1		0	
2nd ,, ...	1		0	
3rd ,, ...	0		0	
4th ,, ...	0		0	
Total ...	——	2	——	0
1887.				
1st Quarter	0		0	
2nd ,, ...	1		1	
3rd ,, ...	1		0	
4th ,, ...	10		1	
Total ...	——	12	——	2
1888.				
1st Quarter	13		0	
2nd ,, ...	4		0	
3rd ,, ...	1		0	
4th ,, ...	0		0	
Total ...	——	18	——	0
1889.				
1st Quarter	0		0	
2nd ,, ...	0		0	
3rd ,, ...	0		0	
4th ,, ...	0		0	
Total ...	——	0	——	0
1890.				
1st Quarter	0		0	
2nd ,, ...	0		0	
3rd ,, ...	0		0	
4th ,, ...	0		0	
Total ...	——	0	——	0
1891.				
1st Quarter	1		0	
2nd ,, ...	15		0	
3rd ,, ...	23		2	
4th ,, ...	8		5	
Total ...	——	47	——	7
Grand Total ...		9,796		1,507

INFLUENZA.

Influenza.

Included in the Deaths allocated to Class I. are 214 primarily referred to Influenza. Of these, 204 occurred in the second quarter. The disease first appeared in the Mortality returns for the week ending May 2nd, when one Death was registered. In the five following weeks the Deaths numbered 9, 26, 25, 37, and 46 respectively. Then came a sudden decrease, 17, 20, 15, and 8 being the numbers for the remaining weeks of the quarter, while in the whole of the next quarter only 9 Deaths were registered. Coincidently with the presence of Influenza came an abnormal Mortality from Bronchitis and Pneumonia. In the second quarter — the quarter to which the epidemic of Influenza was practically confined—the Deaths from Bronchitis numbered 527, and those from Pneumonia, 360. These figures exceeded the averages for the five preceding spring quarters by 284 and 218. This excessive fatality of chest affections cannot all be ascribed to climatic conditions, and it seems probable that a large proportion of it was really caused by Influenza.

Influenza at ages.

In the Table below the incidence of Mortality at various ages is given, and compared with that of recent spring quarters :—

AGES.	Influenza.		Bronchitis.		Pneumonia.	
	SPRING QUARTERS OF					
	1891.	Five years 1886-90.	1891.	Five years 1886-90.	1891.	Five years 1886-90.
Under 1 year	11	—	105	65	51	27
1 to 5	11	—	77	48	74	36
5 ,, 20	10	—	8	3	15	10
20 ,, 40	28	—	14	9	68	23
40 ,, 60	78	—	123	41	87	29
60 and upwards	66	—	200	77	65	17
All ages	204	—	527	243	360	142

It will be seen that it is among persons of twenty years of age and upwards that Influenza has been so terribly fatal; in those who have not reached adult age its fatality is but slight. In a less degree, but still very noticeably, the same is true of Bronchitis and Pneumonia. Thus in persons under twenty years of age the Mortality from Bronchitis is about 60 per cent. above the average ; in persons above twenty years old it is 170 per cent. higher. In other words, the increase in the Mortality from Bronchitis is nearly three times as great in persons over twenty years old as in those under that age. In Pneumonia the increase in persons under twenty years of age is over 90 per cent. ; in those aged twenty and upwards it is no less than 220 per cent. These figures show clearly that the incidence of Influenza, and of the Respiratory Diseases affected by it, has been most heavy amongst adults.

Influenza in localities.

With regard to the distribution of the Deaths during the year over the town, the following figures are of interest :—

Registration Sub-District.	No. of Deaths from Influenza.	Death-rate per 1,000 per annum.
Ladywood	19 ...	0·3
St. Thomas	14 ...	0·4
St. Martin	24 ..	0·6
St. George	30 ...	0·5
All Saints	35 ...	0·6
Deritend...	40 ...	0·4
Duddeston	36 ...	0·6
Edgbaston	16 ...	0·7

It appears from the above figures that Edgbaston has had, proportionately to population, the greatest number of Deaths primarily attributed to Influenza. Of the other districts, St. Martin's, All Saints', and Duddeston have suffered most. It would appear, therefore, that better social conditions do not mitigate the evil effects of the disease, but that its fatality is as marked among the upper as the lower classes of society. The high Mortality rate in Edgbaston is the more remarkable in face of the fact that Influenza is now held to be a specific infectious fever, and as such it might be expected to obtain less hold in a district in which the dwellings are much more isolated than elsewhere in the town.

DISEASE MAP.

Disease Map.

I append to my Report a Map, on which the distribution over the town of the Deaths from Scarlet Fever, Measles, Typhoid Fever, and Diphtheria is indicated. In examining this Map, the first point to be noticed is the small number of marks on the Map as a whole, showing that the total Deaths from the four diseases dealt with have been much fewer than usual. A glance at the Map also shows that the west side of the town has suffered much less than the east—Edgbaston, Rotton Park, and Ladywood Wards being comparatively free from spots and crosses. It will be noticed that Measles has been more fatal in Duddeston, Nechells, St. Stephen's, and St. Mary's Wards than elsewhere.

II.—*PARASITIC*, AND III.—*DIETIC DISEASES.*

Parasitic and Dietic Diseases.

To these two classes of disease 73 Deaths were attributed, 43 of them being due to Intemperance, and 22 to errors in feeding Infants.

IV.—*CONSTITUTIONAL DISEASES.*

Constitutional Diseases.

This class of diseases has claimed 1,441 Deaths—equal to a rate of 3·4 per 1,000, against 3·3 in 1890. The Deaths from Cancer, owing either to increased prevalence or to better diagnosis and more accurate certification, are higher than ever. It is generally held that the tendency to Cancer may be inherited. If this be so, the disease is likely to continue to increase, for its presence is not usually manifested until after the ordinary age of marriage, and nothing can be done therefore to prevent the transmission of the hereditary tendency.

V.—*DEVELOPMENTAL DISEASES.*

Developmental Diseases.

These diseases caused 760 Deaths, a number practically identical with that in 1890. The Death-rate was 1·8, against 1·7 in 1890.

VI.—*LOCAL DISEASES.*

Local Diseases.

This is a very large class of diseases, and includes some of the most fatal—such as Bronchitis, Pneumonia, and Heart Disease. The Deaths allocated to this class numbered 4,793—equal to a rate of 11·1 per thousand, against 11·2 in 1890. Both these Death-rates are considerably higher than usual, owing chiefly to the excessive Mortality, both last year and in 1890, from chest affections, as already mentioned.

VII.—*VIOLENT DEATHS.*

Violent Deaths.

Accidental Suffocation.

This class includes all Deaths due to accident, negligence, homicide, and suicide. Last year such Deaths numbered 389. This figure gives a rate of 0·9 per 1,000, against an identical rate in 1890. Considerably the heaviest Mortality in this class is that due to accidental suffocation. No less than 115 Deaths were attributed to this cause, and 107 were those of infants whose Deaths almost exclusively occurred while in bed with their parents. The Registrar-General, in his Annual Report for 1890, gives some interesting particulars regarding such Deaths. He finds that the younger the infant, the greater the chance of its suffocation in bed, and that suffocation takes place more frequently in winter than in summer. But more important than this is the result of his inquiry as to the days, or rather nights, on which Deaths from suffocation most commonly occur. He finds that more than twice as many infants die from suffocation on Saturday night, as on any other night in the week. After Saturday, Monday and Sunday nights have the worst record. Then the number of Deaths decreases gradually till Friday night, when a slight but distinct increase occurs. The Registrar-General considers that the distribution of Deaths, as stated above, must be caused by the difference in the amount of drunkenness on different days. Saturday is generally both a holiday and a pay-day, on which, consequently, more intoxication occurs than on other days. Monday, too, is a general holiday in many industries and places, and on that day drinking is commonly indulged in. After Monday, money is scarcer and drinking less prevalent, till Friday, when a certain number of workmen are paid their week's wages.

VIII.—*DEATHS FROM ILL-DEFINED AND NOT SPECIFIED CAUSES.*

Deaths from ill-defined and not specified causes.

The Deaths in this class numbered 622—equal to a rate of 1·4 per 1,000. They constitute 6·7 per cent. of the total Mortality. It is unsatisfactory that so large a proportion of the Deaths should necessarily be classed under so indefinite a heading.

CERTIFICATION OF CAUSES OF DEATH.

Certification of causes of Death.

The proportion of uncertified Deaths was last year a little lower than in 1890, but considerably higher than in most recent years. It is to be regretted that so many Deaths escape certification by either a medical practitioner or the Coroner, as such Deaths are, in all probability, frequently attributed by those who register them to erroneous causes.

In the Table below are particulars respecting the certification of causes of Death during 1891, showing not only the numbers of deaths in the various sub-districts for which no certificate was received, but also the numbers and pecrentages certified by medical practitioners and by the Coroner respectively.

Registration Sub-Districts.	Total Deaths.	Certified by		Not Certified.	Proportion per cent. of Deaths.		
					Certified by		Not Certified.
		Registered Medical Practitioners.	Coroner.		Registered Medical Practitioners.	Coroner.	
City of Birmingham.	9,317	8,378	679	260	89·9	7·3	2·8
Ladywood	1,046	953	64	29	91·1	6·1	2·8
St. Thomas	735	624	83	28	84·9	11·3	3·8
St. Martin	771	675	67	29	87·5	8·7	3·8
St. George	1,594	1,340	196	58	84·1	12·3	3·6
All Saints	1,866	1,745	86	35	93·5	4·6	1·9
Deritend	1,645	1,526	88	31	92·8	5·3	1·9
Duddeston	1,371	1,245	85	41	90·8	6·2	3·0
Edgbaston	289	270	10	9	93·4	3·5	3·1

TABLE A.

Deaths Registered in the City of Birmingham during the Year ending January 2nd, 1892.

1892.	AGES.						REGISTRATION SUB-DISTRICTS.								
	0–1	1–5	5–20	20–40	40–60	60 and up.	Ladywood.	St. Thomas.	St. Martin.	St. George.	All Saints.	Deritend.	Duddeston.	Edgbaston.	City.
ALL CAUSES	2504	1259	504	1145	1780	2125	1046	735	771	1594	1866	1645	1371	289	9317
I.—Specific Febrile, or Zymotic Diseases.															
1.—Miasmatic Diseases.															
Smallpox	3	..	..	1	2	1	..	..	..	..	6	..	1	..	7
Measles	27	69	9	..	..	..	3	4	5	22	7	19	45	..	105
Scarlet Fever	6	62	21	1	1	..	2	2	3	4	72	5	3	..	91
Typhus Fever	..	..	..	..	..	..	..	..	..	..	..	..	..	..	.
Whooping Cough	115	160	9	..	..	..	21	25	21	61	21	77	49	9	284
Diphtheria	2	18	15	1	1	1	9	2	1	6	3	11	3	3	38
Simple, Continued, or Ill-defined Fever	..	1	..	..	..	..	..	..	..	..	..	1	..	..	1
Enteric or Typhoid Fever	..	4	28	33	11	1	5	8	6	21	11	15	9	2	77
Influenza	11	13	12	30	79	69	19	14	24	30	35	40	36	16	214
Other Miasmatic Diseases..	5	20	6	..	..	..	4	3	1	14	.	6	3	..	31
2.—Diarrhœal Diseases.															
Simple Cholera	..	..	1	..	..	..	..	..	..	..	..	..	1	..	1
Diarrhœa, Dysentery	245	47	4	3	6	14	29	22	37	67	49	64	47	4	319
3.—Malarial Diseases.															
Remittent Fever	1	..	..	..	..	..	..	..	.	..	..	..	1	..	1
Ague	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
4.—Zoogenous Diseases.															
Cowpox and effects of Vaccination ..	..	..	..	..	..	..	..	..	..	.	..	..	..	..	.
Other Diseases (*e.g.*, Hydrophobia, Glanders, Splenic Fever)	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
5.—Venereal Diseases.															
Syphilis..	28	1	1	3	4	2	8	3	2	5	16	4	1	.	39
Gonorrhœa, Stricture of Urethra ..	..	..	..	..	4	3	.	..	..	4	2	1	..	..	7
6.—Septic Diseases.															
Erysipelas	3	..	..	..	1	7	..	..	1	1	5	..	4	..	11
Pyæmia, Septicæmia	2	..	1	2	2	1	1	2	..	2	..	1	2	..	8
Puerperal Fever	..	..	..	5	..	..	2	.	1	2	..	..	..	..	5
II.—Parasitic Diseases.															
Thrush, and other Vegetable Parasitic Diseases	4	..	..	..	..		2	..	.	2	..	..	..	..	4
Worms, Hydatids, and other Animal Parasitic Diseases		..	..	1	1	..	1	..	..	1	..	..	..	..	2
III.—Dietic Diseases.															
Want of Breast Milk, Starvation ..	22	..	..	1	..	..	1	2	5	3	3	4	4	1	23
Scurvy	..	..	..	..	..	1	..	..	..	..	1	..	..	..	1
Chronic Alcoholism	..	..	..	13	17	8	7	5	7	6	6	5	2	..	38
Delirium Tremens	..	..	..	4	1	..	1	1	1	..	..	1	..	1	5
IV.—Constitutional Diseases.															
Rheumatic Fever, Rheumatism of the Heart	.	..	9	13	1	1	1	1	..	4	5	8	5	..	24
Rheumatism	..	1	3	1	6	6	1	..	3	3	1	6	2	1	17
Gout		.	..	1	5	3	2	1	1	..	2	2	..	1	9
Rickets	12	19	1	..	..	..	3	3	2	6	4	8	5	1	32
Cancer, Malignant Disease ..	..	1	1	28	135	131	31	38	18	49	57	56	28	19	296
Tabes Mesenterica	33	22	1	..	1	..	14	5	7	8	3	8	12	..	57
Tubercular Meningitis, Hydrocephalus..	20	36	10	2	..	..	12	1	11	12	7	12	10	3	68
Phthisis	25	15	69	355	251	47	63	57	67	98	230	132	104	11	762
Other forms of Tuberculosis, Scrofula ..	17	37	29	27	9	2	21	10	4	29	27	13	12	5	121

TABLE A—(*continued*).

DEATHS REGISTERED IN THE CITY OF BIRMINGHAM DURING THE YEAR ENDING JANUARY 2ND, 1892—*continued*.

1892.	AGES.						REGISTRATION SUB-DISTRICTS.								.
	0—1	1—5	5—20	20—40	40—60	60 and up.	Ladywood.	St. Thomas.	St. Martin.	St. George.	All Saints.	Deritend.	Duddeston.	Edgbaston.	City.
IV.—Constitutional Dis.—*continued*.															
Purpura, Hæmorrhagic Diathesis ..	2	..	..	2	..	..	2	1	..	1	..	..	..	..	4
Anæmia, Chlorosis, Leucocythæmia ..	..	2	5	4	3	1	1	3	..	2	3	4	..	2	15
Glycosuria, Diabetes Mellitus	..	..	2	12	11	9	4	2	1	11	3	3	1	9	34
Other Constitutional Diseases	1	..	..	..	..	1	..	..	..	..	1	..	1	..	2
V.—Developmental Diseases.															
Premature Birth	268	..	..	..	..	..	47	16	23	44	47	53	29	9	268
Atelectasis	31	..	..	..	..	..	5	..	..	6	1	10	9	..	31
Congenital Malformations..	26	..	..	..	..	..	8	1	2	4	3	3	5	..	26
Old Age..	..	..	..	..	4	431	43	30	30	56	144	58	50	24	435
VI.—Local Diseases.															
1.—DISEASES OF NERVOUS SYSTEM.															
Inflammation of Brain or Membranes ..	52	45	22	14	13	4	19	17	11	18	36	28	18	3	150
Apoplexy, Softening of Brain, Hemiplegia, Brain Paralysis ..	..	..	2	19	109	191	39	39	25	32	71	59	43	13	321
Insanity, General Paralysis of the Insane	..	..	..	15	24	5	1	2	1	1	37	1	1	..	44
Epilepsy	..	..	5	21	13	3	3	1	5	4	18	2	7	2	42
Convulsions	127	35	2	..	..	..	16	16	20	30	16	36	29	1	164
Laryngismus Stridulus (Spasm of Glottis)	13	6	..	..	..	..	2	1	2	6	..	6	2	..	19
Disease of Spinal Cord, Paraplegia, Paralysis Agitans	2	2	1	4	9	19	3	2	3	4	14	5	2	4	37
Other Diseases of Nervous System ..	11	12	6	7	9	11	9	8	2	7	9	11	9	1	56
2.—DISEASES OF ORGANS OF SPECIAL SENSE. (*e.g.*, of Ear, Eye, and Nose).	2	1	7	2	1	..	2	3	1	2	..	2	3	..	13
3.—DISEASES OF CIRCULATORY SYSTEM.															
Pericarditis	..	..	..	1	..	..	..	..	..	1	..	..	..	..	1
Acute Endocarditis	..	1	2	3	2	..	1	..	..	2	1	2	1	1	8
Valvular Diseases of Heart	..	1	11	32	62	52	11	8	4	28	57	30	17	3	158
Other Diseases of Heart	12	..	26	71	156	186	52	42	42	66	89	67	66	27	451
Aneurism	..	..	..	4	9	3	2	3	1	1	4	3	2	..	16
Embolism, Thrombosis	..	..	..	1	3	10	2	..	..	2	7	3	..	..	14
Other Diseases of Blood Vessels	..	..	..	1	3	8	2	1	2	1	1	3	2	..	12
4.—DISEASES OF RESPIRATORY SYSTEM															
Laryngitis	5	6	..	..	5	2	5	..	2	2	2	4	2	1	18
Croup	8	13	..	..	..	..	3	1	1	6	1	4	5	..	21
Emphysema, Asthma	..	..	..	4	6	14	..	..	1	4	3	8	6	2	24
Bronchitis	389	217	17	40	298	481	161	100	125	284	220	284	233	35	1442
Pneumonia	126	195	40	137	161	127	92	47	73	101	185	131	134	23	786
Pleurisy	1	4	6	9	14	10	7	2	..	11	14	7	2	1	44
Other Diseases of Respiratory System ..	8	9	1	7	28	20	9	10	7	10	6	18	9	4	73
5.—DISEASES OF DIGESTIVE SYSTEM.															
Stomatitis	6	1	..	1	..	..	..	1	1	1	2	..	3	..	8
Dentition	38	40	..	..	..	..	11	2	10	12	9	15	19	..	78
Sore Throat, Quinsy	3	4	1	..	1	2	..	..	2	2	2	2	2	1	11
Diseases of Stomach	51	4	2	15	16	12	17	5	16	13	14	15	13	7	100
Enteritis	67	15	6	4	8	7	8	9	9	31	11	21	15	3	107
Obstructive Diseases of Intestines ..	2	2	4	1	8	13	5	7	1	5	4	3	4	1	30
Hernia	2	..	..	3	10	7	3	4	1	7	1	4	1	1	22
Peritonitis	3	1	12	13	8	5	2	3	5	6	7	11	6	2	42
Cirrhosis of Liver	..	1	..	10	37	8	7	4	8	11	6	16	1	3	56
Jaundice, and other Diseases of Liver	13	1	2	4	18	11	9	4	3	8	9	9	5	2	49
Other Diseases of Digestive System ..	5	3	2	3	9	6	4	4	..	3	8	3	2	4	28
6.—DISEASES OF LYMPHATIC SYSTEM (*e.g.*, of Lymphatics and Spleen).	..	..	1	..	2	..	..	1	..	1	..	1	..	..	3
7.—DISEASES OF GLAND-LIKE ORGANS OF UNCERTAIN USE (*e.g.*, Bronchocele, Addison's Disease).	..	..	1	..	1	..	..	..	1	..	..	1	..	..	2

TABLE A—(*continued*).

Deaths Registered in the City of Birmingham during the Year ending January 2nd, 1892—*continued.*

1892.	AGES.						REGISTRATION SUB-DISTRICTS.								
	0—1	1—5	5—20	20—40	40—60	60 and up.	Ladywood.	St. Thomas.	St. Martin.	St. George.	All Saints.	Deritend.	Duddeston.	Edgbaston.	City.
VI.—Local Diseases—*continued.*															
8.—DISEASES OF URINARY SYSTEM.															
Nephritis	1	8	2	15	14	15	..	6	2	10	24	9	2	2	55
Bright's Disease, Albuminuria	..	4	3	18	45	47	19	12	7	16	32	10	20	1	117
Disease of Bladder or of Prostate	..	..	1	2	6	9	..	3	1	5	3	4	..	2	18
Other Diseases of the Urinary System	1	1	1	4	9	5	3	3	..	5	5	2	2	1	21
9.—DISEASES OF REPRODUCTIVE SYSTEM.															
(A) Of Organs of Generation.															
Male Organs	..	..	..	..	..	1	..	..	1	..	..	..	..	..	1
Female Organs	..	..	...	9	8	5	13	1	1	3	1	1	2	..	22
(B) Of Parturition.															
Abortion, Miscarriage	..	..	..	6	1	..	1	..	1	2	1	2	..	..	7
Puerperal Convulsions	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Placenta Prævia, Flooding	..	..	..	6	1	..	..	1	2	1	..	3	..	..	7
Other Accidents of Child-birth	..	..	3	28	6	..	4	2	3	4	7	10	7	..	37
10.—DISEASES OF BONES AND JOINTS.															
Caries, Necrosis	1	..	2	1	4	..	1	1	.	2	3	1	..	..	8
Arthritis, Ostitis, Periostitis	1	..	1	..	1	..	..	..	1	1	..	1	..	..	3
Other Diseases of Bones and Joints	1	3	8	4	..	1	1	2	1	6	1	3	3	..	17
11.—DISEASES OF INTEGUMENTARY SYSTEM.															
Carbuncle, Phlegmon	..	..	..	..	..	1	1	..	..	..	..	..	..	..	1
Other Diseases of Integumentary System	12	1	2	1	4	9	3	1	2	7	6	4	4	2	29
VII.—Deaths from Violence.															
1.—ACCIDENT OR NEGLIGENCE.															
Fractures and Contusions	2	6	10	15	18	18	5	19	7	24	9	2	3	..	69
Gunshot Wounds	..	..	..	..	2	..	..	..	..	2	..	..	..	..	2
Cut, Stab	..	..	..	..	..	..	..	.	..	..	..	..	..	..	..
Burn, Scald	5	22	24	9	10	7	2	15	..	53	4	3	..	..	77
Poison	..	1	1	1	4	1	..	2	1	3	1	..	1	..	8
Drowning	..	3	4	2	5	3	4	..	..	..	3	5	4	1	17
Suffocation	107	1	2	1	1	3	9	8	18	20	11	22	26	1	115
Otherwise	2	4	10	12	6	19	5	7	2	17	5	5	10	2	53
2.—HOMICIDE.															
Manslaughter	1	..	1	..	..	..	..	..	1	1	..	..	..	..	2
Murder	1	..	1	1	..	..	..	1	..	2	..	..	..	..	3
3.—SUICIDE.															
Gunshot Wounds	..	..	..	..	1	1	..	.	..	1	1	..	..	..	2
Cut, Stab	..	..	..	..	4	4	..	..	1	3	..	3	..	1	8
Poison	..	..	2	2	5	1	1	1	1	5	2	..	..	..	10
Drowning	..	..	2	4	2	..	2	2	..	..	2	2	..	..	8
Hanging	..	..	1	2	5	4	2	..	3	2	1	3	..	1	12
Otherwise	..	..	..	..	1	2	..	..	..	..	1	..	2	..	3
4.—EXECUTION.															
Hanging	..	..	..	..	..	..	..	..	..	..	..	.	..	..	..
VIII.—Deaths from Ill-Defined and not Specified Causes.															
Dropsy	1	..	..	2	1	2	1	1	..	3	1	..	..	..	6
Debility, Atrophy, Inanition	262	8	1	1	4	3	48	12	23	40	39	38	75	4	279
Marasmus	227	46	2	..	1	..	27	19	18	43	49	59	57	4	276
Mortification	..	..	..	1	.	..	..	..	..	..	1	..	..	..	1
Tumour	1	2	2	7	10	4	10	3	2	..	4	5	1	1	26
Abscess	3	..	..	1	1	..	..	1	1	1	..	1	1	..	5
Hæmorrhage	1	..	..	..	..	..	..	..	1	..	..	..	..	..	1
Sudden Death (cause not ascertained)	..	..	..	..	..	..	..	..	..	..	..	..	..	.	..
Other not Specified or Ill-defined Causes	19	2	2	1	1	3	4	3	1	5	10	2	3	..	28

METEOROLOGY AND MORTALITY.

Year. Rainfall.

The year 1891 had a mean temperature of 47°·2, or 0°·7 below the average of the ten years 1880 to 1889. This slight variation from the average must not, however, be supposed to indicate that the temperature was generally equable throughout the year, for, on the contrary, several months were very cold, while others were more than ordinarily warm. The rainfall for the year amounted to 32·74 inches, or 1·88 inches above the average, and was in striking contrast to that of 1890, which was only 22·44 inches.

January. February. March.

The first five months of the year were cold. *January* had a mean temperature 3°·3 below the average. Severe frost prevailed during the first three weeks, a minimum temperature as low as 14° being recorded on one night. The effect of this severe weather on the mortality from Respiratory Complaints was very marked. The rainfall for the month amounted to 2·44 inches, or 0·50 inch above the average. The mean temperature of *February* was identical with the average. The month was characterised by a large amount of sunshine. The rainfall was exceptionally small, only 0·12 inch, or 2·12 inches below the average quantity. I have never before recorded so small a rainfall in February. *March* opened with a week of bright, pleasant weather, followed, however, by cold and cheerless conditions. Its mean temperature was 0°·6 in deficit, while its rainfall was 0·60 inch above the average.

April. May. June.

April proved an unpleasant month, being cold and rather wet, with a decided prevalence of easterly and north-easterly winds. *May* also was cold, its temperature being 2°·2 below the average, a deficit identical with that for April. May was, moreover, exceptionally wet, its rainfall being 1·54 inches above the ordinary amount. In the middle of the month snow fell in such quantity as to lie on the ground to a depth of two or three inches—a very rare occurrence in May. The weather in *June* was much better than in the two preceding months. The mean temperature was 1°·1 above, and the rainfall 0·47 inch below the average.

July. August.

From a health point of view the weather of the next two months was very satisfactory. Both *July* and *August* were very cool, being 2°·0 and 1°·8 below their respective average temperatures. In consequence of this they were not marked by any considerable mortality from Diarrhœa, the great scourge of infant life depending largely on a sufficiently high temperature. Owing to a great extent to the comparative absence of Diarrhœa the summer months had a very small Death-rate, as small in fact as had ever before been recorded. The maximum temperature recorded in July was only 80°·5, and in August only 74°, both being unusually low for the two warmest months of the year. The rainfall in July was 0·45 inch below the average; that for August was 1·09 inches in excess, and rain fell on as many as 17 days. September. *September* was a much pleasanter month than its two predecessors. It had a temperature 2°·6 above the average, and a rainfall 1·32 inches in deficit. The increase in temperature was accompanied by a slight rise in the Diarrhœal Mortality, but this was soon checked by the colder weather October. of *October*, which had a mean temperature of 48°·8, or 1°·8 above the average. The most noticeable feature of the latter month was its excessive rainfall. This amounted to no less than 6·33 inches, or 2·86 inches above the average. Rain fell on 23 days, and on one day the amount measured was as much as November. 1·37 inches. *November* was rather cold, its temperature being 1°·5 below the average. The earlier part of the month was wet and dull, but afterwards the weather improved. The total rainfall was 3·14 inches, or 0·11 inch above the average. December *December* had a mean temperature of 38°·5, or 0°·1 above the average. The first half of the month was warm and wet, but the last two weeks were dry and frosty, with a persistent prevalence of haze and fog. The rainfall was 0·76 inch in excess of the average quantity.

MONTHS.	TEMPERATURE.			RAINFALL.		
	Mean Temperature in Degrees and Parts.	Average for 10 years, 1880-1889 inclusive.	Above or below the average.	Rainfall for Month in Inches and Parts.	Average for 10 years, 1880-1889 inclusive.	Above or below the average.
	°	°	°			
January	33·2	36·5	— 3·3	2·44	1·94	+ 0·50
February.........	38·8	38·8	...	0·12	2·24	— 2·12
March	39·5	40·1	— 0·6	1·62	2·22	— 0·60
April	42·9	45·1	— 2·2	2·15	2·17	— 0·02
May	49·5	51·7	— 2·2	3·99	2·45	+ 1·54
June	58·9	57·8	+ 1·1	2·09	2·56	— 0·47
July..	59·0	61·0	— 2·0	2·54	2·99	— 0·45
August	58·1	59·9	— 1·8	3·47	2·38	+ 1·09
September	58·2	55·6	+ 2·6	1·44	2·76	— 1·32
October	48·8	47·0	+ 1·8	6·33	3·47	+ 2·86
November	41·2	42·7	— 1·5	3·14	3·03	+ 0·11
December	38·5	38·4	+ 0·1	3·41	2·65	+ 0·76
Year..	47·2	47·9	— 0·7	32·74	30·86	+ 1·88

METEOROLOGY, BIRTHS, DEATHS, AND MORTALITY FROM CERTAIN PREVALENT DISEASES FOR EACH WEEK OF 1891.

Week.		Temperature of the Air.			Temperature of the Ground.		Horizontal Movement of Air in Miles.	Mean Humidity, complete Saturation=100.	Rainfall in inches.	Births.	Deaths at				Deaths from								
Number.	Date of Ending.	Highest during week.	Lowest during week.	Mean Temperature.	1 foot deep.	4 feet deep.					All Ages.	Under 1 year.	1 to 5 years.	Over 60.	Small Pox.	Measles.	Scarlet Fever.	Diphtheria.	Wh'ping Cough.	Fever.	Diarrhœa.	Phthisis.	Respiratory Diseases.
	1891.	°	°	°	°																		
1	Jan. 10	38·5	20·5	28·9	34·3	39·2	496	100	0·07	283	237	57	37	62	...	1	4	1	11	1	2	14	78
2	„ 17	42·5	20·0	32·7	34·4	38·6	780	98	0·00	306	231	51	40	53	...	1	1	2	13	1	1	17	68
3	„ 24	43·5	14·0	32·1	...	38·3	1021	97	1·11	286	212	60	29	53	...	1	1	1	6	1	4	15	69
4	„ 31	51·9	34·0	42·0	39·0	38·1	1364	93	1·16	281	221	54	24	48	...	1	..	2	12	2	...	18	56
5	Feb. 7	50·0	33·0	42·0	39·8	39·6	758	90	0·00	335	195	57	25	44	...	...	2	...	5	1	3	16	43
6	„ 14	48·5	32·0	39·1	39·8	40·8	603	92	0·12	292	165	41	27	31	..	...	1	...	8	1	4	17	33
7	„ 21	55·5	23·3	36·1	38·1	40·6	316	92	0·00	286	185	46	28	55	...	1	1	...	16	1	3	15	46
8	„ 28	63·4	24·3	37·8	37·2	39·9	239	90	0·00	289	224	51	30	51	...	1	...	4	8	2	2	20	70
9	Mar. 7	64·2	34·0	47·3	41·6	40·7	1952	83	0·19	287	219	54	45	51	...	...	1	3	20	...	6	17	68
10	„ 14	45·4	20·0	33·6	38·2	41·1	817	94	0·41	281	177	39	20	44	...	...	...	1	9	1	5	23	39
11	„ 21	50·5	26·5	38·2	38·3	40·2	851	89	0·52	343	172	41	24	40	...	1	2	1	9	4	...	22	49
12	„ 28	51·5	26·0	39·5	38·8	40·3	1471	76	0·49	262	174	44	26	42	...	1	1	1	9	2	3	15	34
13	April 4	49·0	25·0	39·4	38·8	40·5	945	74	0·89	295	162	44	29	33	...	2	3	1	12	2	3	13	38
14	„ 11	58·5	30·5	40·9	41·1	40·9	789	89	0·35	320	193	47	29	46	...	2	2	...	10	1	1	13	59
15	„ 18	53·0	29·5	43·1	41·5	41·4	681	76	0·31	289	156	43	23	34	...	...	1	...	12	3	1	12	47
16	„ 25	57·0	31·0	43·3	43·1	42·4	975	79	0·26	306	203	45	23	53	...	1	3	...	8	5	2	12	53
17	May 2	61·0	29·0	48·5	45·4	43·4	1137	78	0·70	280	177	40	24	46	...	...	3	...	4	1	3	18	50
18	„ 9	65·5	35·0	50·3	47·6	44·8	606	77	0·31	259	211	42	32	48	...	..	5	1	6	4	1	16	79
19	„ 16	78·0	35·0	54·2	50·8	46·6	835	74	0·15	260	302	61	34	85	...	...	...	1	11	2	7	22	93
20	„ 23	55·5	31·0	43·8	46·5	47·0	554	80	1·40	304	271	54	33	74	...	...	...	...	4	5	...	28	105
21	„ 30	61·5	38·0	47·8	47·6	46·3	781	81	1·78	302	313	74	31	97	...	1	1	...	4	...	1	22	121
22	June 6	73·0	41·0	57·6	53·9	48·4	570	84	0·70	300	307	51	32	89	...	3	1	1	4	2	3	21	96
23	„ 13	68·0	41·0	53·7	52·6	49·6	590	76	0·00	321	255	48	40	75	...	3	...	1	10	1	2	18	76
24	„ 20	73·0	45·0	60·5	56·4	51·1	547	74	0·02	305	211	44	27	57	...	3	3	...	5	...	5	15	54
25	„ 27	80·0	51·5	62·5	58·5	52·9	629	87	1·07	272	194	46	26	46	...	4	3	...	3	...	3	14	50
26	July 4	74·0	46·0	60·1	58·8	54·2	829	84	0·97	276	139	33	17	30	...	5	1	...	3	...	3	12	18
27	„ 11	69·0	48·5	56·4	57·1	54·2	854	84	0·97	265	129	37	16	34	...	4	1	1	5	2	5	17	27
28	„ 18	80·5	47·0	62·9	58·4	54·2	321	78	0·02	271	137	27	21	29	...	5	..	...	2	1	5	18	18
29	„ 25	74.0	46·0	59·4	59·0	55·9	906	91	0·35	273	125	46	16	21	...	4	3	...	...	...	5	13	15
30	Aug. 1	73·0	42·5	56·6	55·9	54·9	556	92	0·68	302	144	48	24	21	...	1	2	2	1	2	9	14	19
31	„ 8	71·0	42·0	57·2	55·8	54·0	626	86	0·59	224	137	51	14	24	...	6	2	...	...	...	10	11	14
32	„ 15	74·0	52·0	61·6	57·1	54·1	1117	91	0·38	270	117	29	13	23	...	3	5	...	3	1	9	9	22
33	„ 22	71·0	46·0	58·2	57·2	54·8	566	86	1·22	280	128	41	14	31	...	1	3	...	...	...	14	5	17
34	„ 29	66·5	44·5	56·5	55·6	54·6	1706	92	0·70	268	149	56	13	23	1	2	1	...	2	2	17	9	16
35	Sept. 5	67·0	40·0	57·1	54·9	54·3	2421	81	0·48	306	129	36	21	22	...	2	3	...	1	2	17	8	15
36	„ 12	83·0	43·0	62·3	56·4	54·1	1599	78	0·06	275	127	39	9	34	...	1	1	...	2	1	13	11	10
37	„ 19	81·5	43·0	60·4	56·9	54·9	1803	91	0·81	258	130	51	13	20	1	1	...	...	3	2	18	8	17
38	„ 26	65·0	44·0	54·0	54·6	54·4	2402	93	0·36	270	151	79	19	16	...	2	1	1	1	...	29	10	22
39	Oct. 3	67·0	39·0	54·0	53·1	53·6	2568	86	0·39	269	154	41	20	30	...	...	1	1	5	2	17	12	15
40	„ 10	61·0	39·0	53·2	52·2	52·6	2170	91	2·37	255	147	52	21	21	4	1	4	1	3	1	18	14	21
41	„ 17	57·0	39·5	49·0	50·6	52·2	3057	87	2·14	260	159	50	20	30	...	2	3	1	5	5	9	13	22
42	„ 24	56·0	39·0	48·1	48·6	50·5	2031	95	1·28	323	148	66	18	24	...	2	1	1	1	...	12	12	31
43	„ 31	52·5	27·0	43·6	46·6	49·6	2499	89	0·31	289	153	55	28	22	...	3	4	1	2	2	10	11	35
44	Nov. 7	53·0	24·0	41·9	44·1	47·6	1673	94	0·41	283	134	50	18	25	...	2	3	1	...	1	7	12	32
45	„ 14	53·0	33·0	42·7	43·3	47·4	2493	94	1·67	270	186	60	26	36	..	3	4	1	7	2	7	15	48
46	„ 21	55·0	35·5	45·4	45·0	46·7	2106	92	0·85	294	156	65	17	31	...	2	2	1	4	1	5	6	39
47	„ 28	44·5	26·5	36·0	41·4	46·0	1636	90	0·19	249	166	50	21	27	1	1	2	1	...	1	5	16	47
48	Dec. 5	55·0	27·5	43·3	41·1	44·2	2393	94	0·72	231	152	31	21	44	...	3	2	2	3	...	1	13	32
49	„ 12	54·0	32·0	42·8	42·7	44·8	3688	84	1·54	259	154	36	23	40	...	1	1	...	2	3	3	11	37
50	„ 19	53·0	23·0	37·7	40·9	44·1	2193	89	0·50	263	131	43	19	25	...	5	1	...	2	2	3	9	24
51	„ 26	42·0	16·5	27·0	34·9	42·3	1071	100	0·20	177	134	41	27	29	...	8	...	1	3	1	2	10	31
	1892.																						
52	Jan. 2	54·0	30·5	41·3	36·5	40·7	2957	88	0·47	319	234	57	32	56	..	8	1	1	5	1	2	30	54

II.—SANITATION.

i. *Influences affecting or threatening to affect injuriously the Public Health.*

Ashpit Middens

The substitution of the water carriage for the conservancy system of refuse disposal has continued throughout the year, as shown in the following statement :—

Number of Ashpits still existing	7,117
Number of Ashpits removed during 1891	485
Number of Pans abolished during 1891	106
Number of Water-Closets substituted	612
Number of Waste Water Flush Closets substituted	39

Surface Filth.

I am informed by the Chief-Constable that one person was summoned for depositing filth on the surface of the streets. I am afraid, however, that this very small number by no means represents the actual extent to which the objectionable practice is carried.

Smoke.

The Assistant-Inspectors to whom the duty of watching the factory chimneys of the town is deputed made 5,933 observations last year. As a result, 271 manufacturers were found to have broken the regulations as to the emission of dense smoke. Of these 101 were prosecuted, all of them having previously been cautioned for the same offence. The penalties inflicted amounted to £88, and the costs to £49.

Improper Keeping of Animals.

The improper keeping of animals is still very prevalent, and the efforts made to abate the nuisance are largely futile. Some tenants merely remove the animals for a short time, and then reinstate them in their old and objectionable positions.

Insanitary Houses.

Many very insanitary houses have been improved during the year. In March, in consequence of a complaint from the tenant, I inspected a house in Broad Street, and found the conditions to be as follows. There was a dry bell trap in the cellar, and on removing the bell it was found that there was a current of sewer gas sufficiently strong to extinguish a candle. In the hall there was a stone slab, from around which offensive gases were said to arise. The water-closet was of the old "pan" form, and had a defective container, from which sewer gas escaped. The soilpipe was not ventilated, and traversed the kitchen to about one foot from the floor, when it passed out into the yard. Besides the drain which had an opening into the cellar, it seemed probable that the drain receiving the soilpipe passed under the floor of the house, and I asked the instructions of your Committee as to opening up and exploring the course of this drain. The drain was subsequently taken up and a new one substituted, the trap in the cellar being abolished. The ashpit-privy was converted to a water-closet, and the "pan" water-closet inside the house was replaced by a modern closet, with the soilpipe properly ventilated and running outside the house.

Two certificates from medical practitioners were received stating that a house in Bordesley Green was unfit for habitation. It was found that the cellar floor was covered to the depth of an inch or two with semi-liquid mud, and that the house was generally dirty and dilapidated. The accumulation in the cellar was due to the want of a sewer in the road. A sewer has since been made, and the house has been repaired and cleansed.

Insanitary houses— *continued.*

An inspection of a block of houses in Regent Park Road resulted in the discovery that the property was in a very insanitary condition. Under the kitchen floors of all the houses a drain, apparently of the worst possible construction, passed. All the drain-traps in the yards of the houses were either broken or loose in their setting, while the pan-closets, with which the property is supplied, were in each case fixed against the walls of the back kitchens. Such conditions constituted a real danger to the health of a large number of people. The drain was taken up and relaid under the entry, and the traps were replaced by gullies.

Proceedings under the Housing of the Working Classes Act.

During the year I made representations, under the Housing of the Working Classes Act, that the following properties were in a state "so dangerous . . . to health as to be unfit for habitation."

Seven houses, numbered 7 to 13, in 6 Court, Bordesley Street.—All but one of these houses were occupied. The roofs of two of them were very defective. All were very damp, the back walls of the kitchens being four feet below the ground level, and the spouting being defective. The windows did not open sufficiently to allow of proper ventilation. Floors, roofs, walls, and ceilings were in bad repair. The pan privies were filthy, the roofs dilapidated, and the floors badly paved and below the yard level. There was no covering for the ashes. The yard was partly and defectively paved with blue bricks and pebbles, the unpaved part being formed of filthy waste ground. The guttering was defective, the D traps required re-setting, and one was broken. The washhouses were filthy, and one had a defective roof and sink. Pigeons were kept in the scullery of one house, and accumulations of rubbish were found in the yard. Notice was served on the owner to put the houses in sanitary condition ; but on my visiting them some months later, although slightly improved, they were still unfit for habitation, and an application for a Magistrate's order for their closure was therefore made. At the end of the year the question of closing the houses remained undecided, as there seemed to be a possibility that the owner would satisfactorily improve the property.

Seven houses, numbered 1 to 7, in 2 Court, Woodcock Street.—After my representation with regard to this property, and in compliance with the usual notice from the Department, Proceedings under the Housing of the Working Classes Act—*continued*

the owner put the houses into such a condition as was, in my opinion, compatible with healthiness of the occupants, and no further action was therefore required.

Eight houses, numbered 1 to 8, in 13 Court, Emily Street; and eight houses, numbered 1 to 8, in 15 Court, Emily Street.—The roofs of eight of these houses were defective, and the spouting of all of them required repair. The back windows in some instances allowed rain to fall into the rooms. Eleven of the houses were damp, and all of them were filthy. The ceilings and walls required re-plastering. The yards were filthy and badly paved, and the guttering was defective. One D trap was obstructed, and the drainage was running into an old well; while another was out of its setting. The privies were dilapidated, two being without roofs and having no risers to the seats, and no doors. The flooring was also defective, and there was no provision for ashes. Of the washhouses, two were wrecked, and another was not fit for use. Only two of the houses were occupied. The owner failed to repair this property, and a closing order was subsequently obtained.

Ten houses, numbered 1 to 10, in 16 Court, Angelina Street; and eight houses in 18 Court, Angelina Street.—These houses were in a similar condition to those just described in Emily Street, though not quite so insanitary. The owner failed to satisfactorily repair them, and a closing order was accordingly applied for. At the end of the year the case remained *sub judice.*

Seven houses, numbered 1 to 7, at the rear of No. 44, Icknield Port Road; and No. 45 in front, and seven houses, numbered 1 to 7, at the rear of No. 45, Icknield Port Road. — The roofs of all these houses were defective, and so was the spouting; all the houses were damp. The windows were mostly broken. The floors, ceilings, and walls required repairing. The yard was only partly and defectively paved, and the unpaved part consisted of filthy waste ground. The gutters were all out of repair, and the D traps required opening, cleansing, and re-setting. The pan privies were filthy and dilapidated, and the yard was filthy from defæcation. There was no covering for the ashes. One washhouse had a defective roof, and in one the sink was destroyed. Only four of the houses were occupied. After due notice to the owner, the property was compulsorily closed.

239½ and 241 in front, and 17 houses, numbered 1 to 17, at the rear in Camden Street, known as "Cottage Terrace."—The houses were in very bad repair, roofs being defective, and plastering requiring to be made good. The eave and down spouting was defective, and all the houses were damp. The windows were all dilapidated. The yard at the back was only partially and imperfectly paved, and the guttering required to be taken up and re-laid. The so-called gardens in front were

Proceedings under the Housing of the Working Classes Act—*continued.*

merely waste ground, and the passages were unpaved and filthy. Several D traps were unset, and others were blocked. The pan privies required repairing, the roofs and woodwork being defective, and the floors requiring raising. Other parts of the premises besides the privies had been used for defæcation, a washhouse containing rubbish and fæcal matter. The washhouses required re-roofing, there were no bend-pipes to the sinks, the floors needed raising, and the brickwork repairing. The washhouses were also obstructive to several of the houses. In view of these conditions the Magistrates made an order for the closing of the property.

Five houses, numbered 4, 5, 6, 7, and 8, in 12 Court, Moor Street.—The court was approached by a low, narrow entry, 56 feet long and 3 feet wide. The court itself was 63 feet long and less than 9 feet wide, so that there was only this space intervening between the fronts of the cottages and the line of shopping. The upper end of the court was blocked by high buildings, and the lower end was also blocked in a similar manner, excepting for the entry referred to. The court was partly paved with bricks and partly with stones (petrified kidneys), and there was a defective surface gutter without proper fall. There were five cottages in the court, numbered 4, 5, 6, 7, and 8 respectively. Nos. 4, 5, and 6 were attic-high; Nos. 7 and 8 only chamber-high. The three former contained only three rooms each, and the two latter only two rooms each. In No. 4 both bedrooms were damp, owing to the defective roof. The stairs were defective, the floor of the kitchen was damp, and the walls were also damp in patches from ground moisture. The windows opened only to a limited extent. An offensive pan-closet and urinal were situated within five feet of the house door, while the dust-shed adjoined it, and there was a stable opposite to it. The height to the top of the attic window from the ground was 22 feet; that to the eaves of the shopping opposite was 18 feet. No. 5 was void; No. 7 was very dirty; No. 8 was the same, and the back wall of the living-room was wet. These cottages had no back doors or windows, and therefore no through ventilation, and they were all very dark. Owing to the narrowness of the court, its darkness, and deficient ventilation; owing also to the cottages thus being without proper ventilation; to the want of space for privies and dust receptacles; and to the dilapidated and generally bad condition of the property, I considered the houses unfit for habitation. Notice was sent to the owner to put the houses in habitable condition. At the close of the year no further steps had been taken, the requisite time not having elapsed.

Nuisance from Sewers.

The effluvia arising from sewers, particularly in the Edgbaston district, still constitute a serious nuisance. At the end of the year 1890 I had a conference with the City Surveyor on the subject. Since that time the Public Works Committee have given the matter their consideration, and

Nuisance from Sewers—*continued.*

Mr. Till has tried various methods for lessening the evil. The Committee consider that the paving of road surfaces, by lessening the amount of detritus carried into the sewers, would render them much cleaner. They have purchased one large flushing-tank on wheels, and intend obtaining two more. These will, no doubt, prove very advantageous. From the City Surveyor's experiments, it appears that charcoal baskets for deodorising the effluvia are of little use. This result might have been anticipated. The connection of factory chimneys with the sewers, and the provision of extraction-pipes with gas burning in them, proved also of little value. Ventilating-pipes running up the sides of buildings, and having cowls at the top, are considered to be useful, and the Public Works Committee propose to use them more extensively. Several other plans have been considered or tried, but none of them have proved very successful. The Committee, however, are still pursuing their inquiries on the matter, and it may be hoped that as a result the question may eventually be satisfactorily settled.

Nuisance from Edgbaston Reservoir.

During July, complaints were made of the stench arising from the western end of Edgbaston Reservoir. The nuisance arose from an overflow of sewage from a storm-outlet in Rotton Park Road, caused by the obstruction of the sewer. The obstruction was removed, and the sewage mud which had accumulated was disinfected, with the result that no further nuisance arose.

Impure Building Site.

In December, at the request of the Building Surveyor, I examined a proposed building site in Carrington Road, and reported on the conditions I found existing, expressing also my opinion that the site was totally unfit as a foundation for dwelling-houses. The following is a copy of my letter :—

"December 8th, 1891.

"Dear Sir,

"I have visited and inspected the building land in Carrington Road, Small Heath, on which Mr. Thomas is about to erect houses, and I find that a portion of the foundation consists of road sweepings, containing much animal and vegetable matter and moisture. Such material is totally unfit as a foundation for buildings, owing to the decomposition, and consequent evolution of noxious gases, which will go on for an indefinite time. I am of opinion, therefore, that all this deposited material should be dug out, and its place supplied with unobjectionable mineral refuse such as ashes, slag, and the like, quite free from organic matter. The surface of the ground under the buildings should then be covered to the thickness of at least six inches by good cement, concrete, or asphalte, and upon this the footings of the walls should be constructed ; and the portions of

Impure Building Site—*continued.*

the external walls, which will be situated below the level of this impure soil, should be built of blue bricks joined by cement, in order to prevent the entrance of filthy water exuding from the impure soil.

"I remain,
"Yours faithfully,
"ALFRED HILL, M.D.

"F. W. Lloyd, Esq.,
"Building Surveyor."

I afterwards received visits from the ground landlord and the builder, with a view to obtain my consent to the building being put up on condition that the surface of the soil be covered with concrete. In face of the facts, however, given in my report, I could not see my way to comply, as I did not consider that mere concreting would be effectual in preventing contamination of the houses above by the filthy ground-air which would be generated in the impure soil.

City Asylum

In March I received a statement from Mr. Whitcombe, the Superintendent of the City Asylum, to the effect that cases of Diarrhœa were continually cropping up, for which no cause could be found unless it existed in the water supplied by the deep well of the institution. I accordingly analysed the water, and, on the further request of the Superintendent, I inspected, in conjunction with the Inspector of Nuisances, the drainage and general sanitary arrangements. The particulars are given in my Report to the Lunatic Asylum Committee, below, to which, however, I may add that on the discontinuance of the use of the water the number of cases of diarrhœa rapidly diminished.

Report on the City Asylum.

The following is a copy of my report :—

"May 7th, 1891.

"Dear Sir,

"In conformity with your request, I have inspected the drainage arrangements at the City Asylum as far as possible, but there are, of course, many parts which are quite concealed, and I understand that the plan of drains shown to me is not quite correct. The following are the principal points to which attention is required :—

"*Main Drain.*—Portions of this drain pass under the floor of the building ; and in one instance there is a catch-pit under the floor of the passage in the basement, covered by a stone slab, which was not securely cemented down. Where accessible for inspection the drains were found defective, the fall insufficient and uneven, and no provision made for ventilation. The flushing chamber itself receives drains, is not automatic, and allows filth to accumulate on the bottom. On the plan the drains are shown as discharging into a dumb-

Report on the City Asylum—*continued.*

well, but I could get no information whether this is still the case or not, or whether it is connected with the Corporation sewer or not. The plan shows drainage from the Gaol entering the same dumb-well, and not disconnected from it, but receiving tributary drains from the Asylum.

"The whole of the drains, where possible, should be removed from under the building. This appears to be possible in every instance, excepting the small portion which passes under the entrance-hall, and is marked 'A' on the plan. This portion of the drain should be taken out and re-laid with iron pipes with lead-caulked joints, with a syphon-trap and fresh-air inlet at the front; and extraction-pipes should be attached in courts B and C, the drains of which should then be connected with a syphon-trap, fresh-air inlet, and extraction-pipe at the head of each drain.

"Any dumb-wells should be abolished, and the main drain connected with the sewer. A properly constructed inspection chamber, with half-pipe bottom, syphon on sewer side, and open grate for ventilation, and inlet for air, should be provided at the point where the drain leaves the Asylum premises; and extraction-pipes and automatic flushing-tanks should be placed at the heads of the drains.

"*Water-closets.*—The water-closets are not properly detached from the various wards, and could only be made so by entire re-modelling. In most instances they might be improved by re-arrangement of the existing partitions. The ventilation is defective, depending on the opening of windows, which, though controllable, or because they are controllable, are generally shut instead of open. As the closets communicate with the wards, foul air is inevitably drawn into them.

"The closet pans are principally of the short Hopper type, and insufficiently flushed from single-valve cisterns, which act only while the 'pull' is held. They are boxed in with wood seats and risers, rendering cleansing difficult. This casing should be removed, and self-supporting, enamelled, straight-backed closets should be substituted, with hinged flap-seats carried on brackets. The closets should be flushed from syphon cisterns which, by a momentary pull, discharge at once the necessary quantity of water.

"There is no provision for fresh-air inlets to the soil-pipes, the vertical pipes being trapped at their base. The horizontal pipes are dead, that is closed at the ends, and each receives about six closets. An air inlet between a syphon trap and the base of the vertical pipe should be provided, and where possible the dead ends of the horizontal pipes should be opened to the outer air, and so arranged that a current of air should pass through them.

Report on the City Asylum—*continued.*

"*Lavatories and Baths.*—These communicate directly with the wards, no provision having been made for cross-ventilation. The basins are connected directly with horizontal pipes below them, which enter vertical pipes outside, terminating above the ground near D-trapped drains. A strong inrush of air is perceptible from nearly all of the overflows of baths, and from the lavatory basins when the plugs are removed The vertical pipes require carrying up clear of the roof, and the dead ends of the horizontal pipes should be open and made to terminate in the open air.

"The *rainwater-pipes* from the roof are not disconnected from the drains, and several terminate in close proximity to windows. Some are said to be connected with the drains, and some to discharge into a large soft-water cistern, the water in which is heated by means of the exhaust steam from the engine, and the overflow of which is not disconnected. The whole of the rainwater-pipes should be cut off at their base, and discharge over or near syphon gully traps. The overflow-pipe from the soft-water cistern should be disconnected from the drain. The cistern should not receive the exhaust from the engine unless previously condensed.

"Several of the *surface drains* on the walks and drive appear to be connected with the main drain, without being trapped.

"*Laundry.*—The drains on the floor are defective and offensive. The whole of these should be abolished, and the floor so laid that all slop-water should discharge on to a syphon gully trap outside.

"*Farm.*—There is a defectively-set D trap on the floor of the dairy. This, I was informed, was connected with the main drain, but was about to be removed. Untrapped drains exist on the floors of the cowsheds, connected with a 'sock-pit' in the yard. These should be removed to the outside of the building, and direct communication with the 'sock-pit' cut off by means of syphon gully traps.

"The *well* I have examined on several occasions, and found that the quality of the water is gradually deteriorating. Believing that its change is caused by the admission of sewage into the well, I requested the Inspector to collect a sample from the upper part of the well, before it could become mixed with the water in the bore-hole. The results of analysis show that my impressions were correct, for the water so intercepted

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Report on the City Asylum—*continued.*

proves to be badly contaminated with sewage matters. Such impurities must be derived from the drains, cesspools, and the like; and I need hardly say that the water in its present condition is dangerous for use, though it could be made fit by being previously boiled.

"I presume you will submit this Report to the Asylum Committee.

"I remain,

"Yours faithfully,

"ALFRED HILL, M.D.,

"*Medical Officer of Health*

"E. B. Whitcombe, Esq., M.R.C.S., L.S.A.,

"*Superintendent of the City Asylum.*"

The alteration of the drains required to put the Asylum in a good sanitary condition is now in progress.

Notification of Infectious Diseases.

ii. *The causes, origin, and distribution of disease.*—With a view to showing the relative prevalence of infectious disease in various parts of the City, I have allotted the cases notified to the Registration Sub-Districts in which the patients lived. I find the total number of cases reported, and what I will call the case-rate, *i.e.*, the proportion of cases to 1,000 persons living, to be as follows:—

	Notified Cases of Infectious Disease.	Case-rate per 1,000.
Ladywood	296	5·3
St. Thomas	235	7·1
St. Martin	306	7·9
St. George	361	5·8
All Saints	278	5·0
Deritend	624	6·5
Duddeston	334	5·2
Edgbaston	84	3·4
City	2,518	5·9

It will be noticed that three of the districts, viz., those of St. Martin, St. Thomas, and Deritend, have had a much greater amount of infectious sickness than the rest. Edgbaston, as might be expected from the sparsity of population and the better means of isolation, suffers least of all. In St. Martin and Deritend Sub-Districts there has been a greater prevalence of Scarlet Fever than elsewhere; while in St. Thomas the excessive case-rate is due to Continued Fever and Erysipelas.

Looking at some of the diseases individually, I find that Scarlet Fever has been most prevalent in St. Martin and Deritend. Diphtheria has been more prevalent in Edgbaston than elsewhere; in Duddeston it has been slight, while in St,

Notification of Infectious Diseases—*continued.*

Thomas only two cases were notified. Unlike Diphtheria, Typhoid Fever has scarcely manifested itself at Edgbaston; Deritend, St. Martin, and St. Thomas have all had proportionately more cases than the town as a whole. A very excessive number of cases of Erysipelas were reported on St. Thomas and Deritend Sub-Districts, St. Thomas claiming twice as large a proportion as the town as a whole.

Scarlet Fever has been notified in 1,466 instances, against 2,995; that is, there were more than twice as many cases in 1890. The disease in its epidemic character seems, after several years of extensive prevalence, to be passing away. Typhoid Fever shows an increase from 272 to 397 cases. This is a very large variation, and, strange to say, the increase occurred not in the autumn, when Typhoid Fever attains its greatest prevalence, but in the spring. The cases of Erysipelas numbered 367, against 395, and those of Diphtheria only 150, against 223. The cases of Membranous Croup, Simple Continued Fever, and Puerperal Fever were but few, and did not vary much from the numbers in 1890; but Smallpox, which was quite absent from the City in that year, claimed 47 cases in 1891.

The total number of cases notified during the year was 2,518, against 3,974 in 1890. Particulars respecting notification are given on pages 65, 66, in Tables VIII. and IX.

The complete notification of cases of communicable disease makes more efficient preventive action possible. All houses in which such cases occur are examined. In cases of Scarlet Fever and Smallpox the patients are removed—if willing—to the City Hospital, and the houses are fumigated with sulphur, stripped of wall paper, and limewashed. Infected clothing is disinfected, and notices are sent to schools and business houses where it is desirable that attendance should be discontinued till danger of infection is over. In addition to the value of these measures in respect to the particular cases which call for them, the constant examination of premises which is entailed serves to bring the houses of the City generally into a more satisfactory state than they were ever in before.

iii. *Advice to the Sanitary Authority on matters affecting the Public Health.—*

A large part of my advice to your Committee will be found in other sections of my Report in connection with the particular conditions to which my recommendations referred.

Trapping of Sink Drains.

I hold it of importance that every sink-drain should not only be disconnected from the sewer, but should also be rapped at the top. Such drains serve to carry away filthy water containing greasy matters, ap, particles of animal and

Trapping of Sink Drains—*continued.*

vegetable refuse, and frequently, no doubt, much more doubtful and dangerous matters, all of which combine to form a coating on the inside of the pipe. The organic part of this coating decomposes, and the foul gases generated are drawn, owing to the greater warmth of the internal air, into the house. This in itself constitutes a serious source of danger, particularly where the sink-pipe has necessarily to be of considerable length. But this is not the only danger. In most cases the sink-pipe discharges immediately over the yard-trap, commonly a "D." There is always a possibility that the trap may, from several causes, become unsealed. If this occurs, a discharge of sewer-air takes place just below the sink-pipe, which acts as an efficient inlet to convey the foul emanations from the sewer directly into the house. In consideration of these facts, I requested the City Surveyor to direct, in passing plans, that all sink-drains should be trapped. Mr. Till did not think he had the power to enforce this, and I brought the matter before your Committee, who are advised that there is no such legal power. No steps are therefore being taken to obtain the trapping of sinks in new houses; and I wish to bring the matter again before you, and to express my conviction that, in the interests of health, the necessary power should be obtained to secure such trapping.

Pan Privies under Workshops.

The Inspector of Factories having reported to me a nuisance, arising from two pan-closets under a workshop at 3, Mary Street, St. Paul's Square, I visited the premises, and found that the alleged nuisance existed, and was dangerous to the health of the workpeople. Complaints of a similar kind had been previously made by the Factory Inspector, and I recommended that in this case the pans be removed and water-closets be substituted for them. Section 3 of the Factory and Workshop Act, 1891, puts the enforcement of sanitary provisions upon the Sanitary Authority; and Section 4 requires that "every work-place within the meaning of the Public Health Act, 1875, shall be kept free from effluvia arising from any drain, water-closet, earth-closet, privy, urinal, or other nuisance." A very important point exists in connection with Section 2, Sub-section 2, which confers upon the Factory Inspector power to take proceedings for the removal of sanitary defects in cases where the Sanitary Authority has failed, after notice from him, to take the required action, and which empowers him to recover from the Sanitary Authority the expenses incurred.

Paving of Yards.

I consider it very desirable that Sanitary Authorities should take more decided steps to obtain the complete and effective pavement of the ground adjacent to dwellings. There can be no doubt that by such means a vast amount of soil pollution would be obviated, while the sites of the houses would be made much less damp, and both these conditions would raise the general standard of health of the occupants.

Bearing this in mind, I think it very desirable that a bye-law should be made for enforcing the better pavement of "yards and open spaces in connection with dwelling-houses," as provided for in Section 23 of the Public Health Act Amendment Act, 1890.

Influenza.

iv. *Outbreaks of Infectious, Contagious, or Epidemic Diseases.*—Of the Influenza epidemic in the spring quarter, I have given as full particulars as possible under Vital Statistics, on pages 21-23. The disease only came under my notice through the medium of the Mortality returns, as it is not notifiable.

Outbreak of Smallpox.

An outbreak of Smallpox occurred during the year. Fortunately, it was stamped out before it attained any great magnitude, though not until 47 cases had arisen. The first case was that of a youth, living in Grant Street. He was employed by a firm of foreign merchants, and one of the travellers for the firm had just recently returned from Lisbon, suffering from an eruption, which was not recognised as due to Smallpox. Smallpox was prevalent at Lisbon, however, at the time, and it seems likely that he introduced it to Birmingham. Shortly afterwards a woman, whose son worked for the same firm of merchants, was attacked, and afterwards her husband and two children contracted the disease. A ward maid at the City Hospital, to which the patients were removed, caught the complaint; and a case occurred in Spring Hill, which could not be traced in any way.

The disease next manifested itself in a family named Haywood, living in Wellington Street, no source of infection being discovered. Five members of this family were attacked. About a week afterwards a woman, who had visited their house, developed the disease, and three days later a man, who worked at the same place as one of the Haywoods, contracted it. In the next case the source of infection could not be traced. Then a case occurred in a woman whose sister was suffering from Smallpox, at Balsall Heath, at that time outside the City boundary. After about three weeks a case occurred in Lower Essex Street, which could not be accounted for. The disease then appeared in a court in High Street, Bordesley, no apparent connection with other cases being found. Within the next ten days nine cases were reported in the same block of buildings. In the next three cases the source of infection could not be discovered. One of the patients was an inmate of a common lodging-house in the Crescent, and had slept in two other lodging-houses, viz., in Summer Lane and Rea Street. All three houses were at once fumigated and lime-washed. The bedding was either destroyed or disinfected, but notwithstanding this three other inmates of the house in the Crescent, and one lodger at the house in Rea Street, developed Smallpox. One other case occurred in a common lodging-house, but whether it was connected with those just

Outbreak of Smallpox—*continued.*

mentioned could not be discovered. Fortunately, however, no further spread of the disease among common lodging-houses took place. Two children of one of the earlier patients caught the disease after his removal to the City Hospital. In three following cases the source of infection was doubtful. The next three patients had all been in contact with others suffering from the same complaint. At short intervals the disease appeared in four different houses in various parts of the town, no satisfactory clue being found to the source of infection. The last case occurred on December 4th; and at the time of writing not a single case remains in the city.

Of the 47 cases, 44 were removed to the City Hospital. Of the remaining three, two were adults, who refused to be taken to the Hospital; the third was an infant, who died before removal could be effected. With respect to the two cases treated at home, the strictest precautions were adopted, and no spread of the disease occurred. Three of the cases were unvaccinated, and two others were doubtful.

The means taken to cope with the outbreak included the fumigation, stripping, and limewashing of the patients' dwellings; the fumigation, where possible, of their business places, and of houses in which it seemed likely that the infection had been carried; the disinfection of bedding, clothing, carpets, and other articles exposed to infection; and the re-vaccination of persons who had been in contact with patients, and who were willing to undergo the operation. Very few persons, however, would avail themselves of the protection afforded by re-vaccination. Special steps were taken in regard to lodging-houses, the rooms infected being closed for a sufficient length of time to allow the danger of infection to be passed.

Unwholesome Food.

v. *Examination of, and action in regard to Suspected, Diseased, or Unwholesome Food.*—From returns made by Mr. Birckley, Superintendent of Markets, it appears that 16 seizures and 881 voluntary surrenders of bad meat were effected during the year. The amount destroyed weighed over 104 tons, an extremely large quantity. Three persons were fined for exposing bad meat for sale, the penalties amounting to £30 and the costs to £7 3s. 6d.

In addition to the above, 152 lots of unsound fish were given up by the owners, and one seizure was made by the officers. Nearly twenty-four tons weight was destroyed.

Over four tons of fruit and ten cwt. of rotten cheese also had to be destroyed.

vi. *Duties under Sanitary Bye-Laws and Regulations.*—These relate to Common Lodging Houses, Houses let in Lodgings, Slaughterhouses, Dairies, Cowsheds, and places for the storage and sale of milk.

Common Lodging Houses.

Common Lodging Houses.

The number had further decreased from 87 at the beginning, to 83 at the end of 1891. They received 7,849 visits by day, and 1,106 visits by night. Six summonses were taken out against keepers: two for receiving lodgers in unregistered houses, two for neglecting to cleanse the premises before 10 o'clock in the morning, one for overcrowding, and one for overcrowding and allowing persons of both sexes to use the same sleeping apartment.

Houses Let in Lodgings.

Houses let in Lodgings.

The number of these at the end of the year was 125, against 128. They are registered to accommodate 699 persons.

Slaughterhouses.

Slaughterhouses.

The officers of the Markets and Fairs Committee are responsible for the inspection of Slaughterhouses, and they paid 9,677 visits to them in 1891.

At the request of the Markets and Fairs Committee I visited a Slaughterhouse in Icknield Street, which it was proposed to alter and improve. I reported that the premises were crowded, ill-arranged, and dilapidated, and that it would be advisable to strike out certain shopping from the plan in order to obtain more air space. I regretted that the Slaughterhouse could not be abolished altogether, but as the Committee could not see their way to this, I recommended that the alteration be sanctioned. I again visited the premises after alteration, and found a number of defects. The fasting pen and a proposed pickling and sausage room were in direct communication with the slaughterhouse. The floor was laid not in cement but in soft mortar, and there was no catchpit for intercepting blood, manure, and other solid matter so as to prevent their admission into the sewer. After an interval of a month I again visited and found that these defects had been remedied. I then recommended that after completion of the yard pavement the use of the building should be sanctioned.

I also inspected premises in Saltley Road, which, though intended for a slaughterhouse, had never been used as such. I found the building to be roomy and convenient. I considered that the yard and approaches should be paved, and that the floor of the Slaughterhouse should be laid in cement, and the walls cemented to a height of five feet. I also suggested that a water-tap should be placed in the Slaughterhouse, that the drain-trap should be removed to the outside, and that the door communicating with the fasting-pen should be bricked up. After these alterations, I recommended that the required permission be given to use the premises as a Slaughterhouse.

DAIRIES, MILKSHOPS, AND COWSHEDS.

Dairies and Milkshops.

The number of visits paid to Dairies and Milkshops was 2,852. As a result of these visits, 46 shops were cleansed and limewashed; 48 cellars and 40 pantries were similarly purified. The sale of lamp oil was stopped in nine instances; that of tripe in five; that of fish in seven; and that of vinegar and pickles in 66 cases. Dirty vessels for storing milk were found in five cases.

Four cases of Scarlet Fever, two of Typhoid Fever, and one of Diphtheria occurred during the year in Dairies and Milkshops. These were promptly and efficiently dealt with, so that no spread of the infection occurred.

Two hundred and eighty-one applications were made for permission to sell milk, but 154 of them were refused. Twelve persons were registered as purveyors of milk only, and two as keepers of dairies.

Pleuro-Pneumonia.

No case of Pleuro-Pneumonia was found during the year.

Cowsheds.

The Assistant Inspectors paid 2,047 visits to Cowsheds in the City.

CANAL BOATS ACTS, 1877 AND 1884.

Canal Boats Acts.

The Assistant Canal Boat Inspector examined 778 boats last year, and found 1,249 persons on them. Eighty-eight contraventions of the provisions of the Acts were discovered. Notices cautioning the owners have been sufficient to cause the legal infringements to be attended to without further action being necessitated. Two cases of infectious disease, viz., Scarlet Fever, occurred. The patients were removed to the City Hospital, and the boats were detained until their disinfection had been carried out, when they were supplied with the necessary certificate of freedom from infection. The number of boats registered was 37; 35 registrations were cancelled; and 19 boats were re-registered after structural alterations.

Owing to the fact that sleeping on board has to be proved, the Inspector has had much difficulty in preventing the carrying on various boats of a larger number of persons than the certificates allow. The difficulty is enhanced by his being prohibited from entering the boats at night. The want of a clause compelling re-registration on change of ownership, also continues to cause much trouble in finding out who is the present owner of a particular boat, with regard to which action is necessary.

BAKEHOUSES.

Bakehouses.

The Assistant Inspector made 976 inspections of Bakehouses during the year. Youths were found to be employed in seven of them, and the fact was notified to H.M. Inspectors of Factories. A drain was found inside one Bakehouse; dogs were discovered in seven instances; and rabbits in one other. Orders for cleansing 71 Bakehouses were given during the year, and in two cases the ventilation was improved.

Offensive Trades.

vii. *Offensive Trades.*—Three applications were made during the year for permission to establish offensive trades. The first was made with a view to opening premises at 76, Dean Street, for the business of a wool, hide, and skin merchant. I found the premises to be situated in a crowded part of the town, and to abut directly on the street, besides being in close proximity to houses. There was no open-air area either at the side or back, and no facility for ventilation. I therefore reported that the premises were unsuitable for the purpose proposed.

Application was made for a license to carry on the trade of tallow melting, at Duke Street. The neighbourhood is a very crowded one, and I considered that tallow melting in such a situation could not fail to be a nuisance. The applicants already had a license for premises in Dalton Street, and as it was possible for them to carry on the whole of their business there, I recommended that the license be refused.

I visited a site in Bradford Street, on which it was proposed to erect a Hide and Skin Market. I found the site to be a suitable and convenient one, and saw no objection to its use for the purpose suggested.

In pursuance of a resolution of the Health Sub-Committee, I made the following report:—

> "I beg to report, in reference to Minute No. 2,655, that I have visited and inspected the locality referred to in the Report of the Inspector of Nuisances, comprising Icknield Port Road, Rotton Park Street, and Wiggin Street.
>
> "There is a great variety of emanations from the various works, such as smoke—in enormous quantities, vapours of ammoniacal salt, sulphurous and other gases, vapours of turpentine, products of oil boiling, and others, including the smoke from the stack at the depôt of the Corporation in Rotton Park Street, where refuse is burned. The operation of burning was going on at the time of my visit, but there was scarcely any smoke issuing from the stack, and it was with considerable difficulty that any odour could be discovered; and I am of opinion that the nuisance from the Corporation establishment is far less than that from the surrounding works. I can, moreover, trace no illness as the result of the work carried on in the neighbourhood."

Fortnightly Reports of the Medical Officer of Health.

viii. *Fortnightly Reports of the Medical Officer of Health to the Health Committee.*—I have from time to time reported to your Committee on various questions, including the following :—

1. The general health of the City, as shown by the total Death-rate, Zymotic Death-rate, and Mortality from special diseases.
2. The occurrence of Infectious Disease, and the results of the investigations of certain of the most dangerous cases.
3. The Waters supplied by the Corporation, and from other sources.
4. Articles of Food, Drink, and Drugs, obtained for analysis, and the analysis of articles of a miscelloneous character.
5. Diseased and unwholesome food.
6. Reports on special questions in pursuance of resolutions, instructions, and otherwise.

CITY HOSPITAL.

City Hospital.

The following remarks on the City Hospital are drawn from the report of Mr. Manning, the Medical Superintendent. It appears that the general administration of the Hospital has been as successful as usual. The strain on the accommodation has been much less than during the two preceding years. The prompt removal of cases would, however, be much expedited by provision being made for the Removal Officer to live at the Hospital.

Many sanitary improvements have been effected in the Hospital buildings, including the re-modelling of the water closets at the Lodge Road Hospital, and the laying of a new drain at the Convalescent Home. A very useful provision has been made by partitioning Ward 5 into four compartments, to be used as Quarantine Wards. The appointment of a special officer to act as Steward should prove advantageous, both by promoting economy and relieving the other officials. The want of sufficient and convenient administrative buildings, however, still calls for prompt attention.

During the calendar year, which differs slightly from the period embraced by my report, Mr. Manning received 1,230 cases certified as Scarlet Fever, and of these 57, or 4·6 per cent., proved to have been incorrectly diagnosed. This large percentage points forcibly to the necessity which then existed for a Quarantine Ward. The death-rate among cases treated at the Hospital was 5·6 per cent., while in patients treated at their homes it was 9·3 per cent., showing very conclusively that the chances of recovery are materially increased by removal to the Hospital.

Including a Ward-maid, who contracted the disease in the Hospital, and who was the only member of the staff who had not been re-vaccinated, there were 49 persons admitted to the Hospital as suffering from Smallpox, of whom only 44 really had the disease. Of the patients admitted, 37 had been primarily vaccinated, and only two of these died; five cases were unvaccinated, and of these three succumbed, two of whom were infants. One man whose vaccination was doubtful died in the Hospital, and one patient who recovered had had a previous attack of Smallpox.

City Hospital. Cases admitted each year.

The numbers of cases both of Scarlatina and Smallpox admitted to the Hospital from the old city in each quarter since the opening of the first wards are as follows:—

DATE.	Smallpox.	Scarlatina.	Total Cases.
1874.			
4th Quarter	194	—	194
(2nd Nov. to the end of the year)			
1875.			
1st Quarter	186	—	186
2nd ,, ...	169	—	169
3rd ,, ...	53	13	66
4th ,, ...	12	7	19
Totals	420	20	440
1876.			
1st Quarter	2	1	3
2nd ,, ...	2	4	6
3rd ,, ...	2	5	7
4th ,, ...	5	28	33
Totals	11	38	49
1877.			
1st Quarter	4	20	24
2nd , ...	19	7	26
3rd ,, ...	15	13	28
4th ,, ...	0	3	3
Totals	38	43	81
1878.			
1st Quarter	3	13	16
2nd ,, ...	4	34	38
3rd ,, ...	6	139	145
4th ,, ...	7	238	245
Totals	20	424	444

City Hospital.
Cases admitted each year—
continued.

DATE.	Small-pox.	Scarlatina.	Total Cases.
1879.			
1st Quarter	1	60	61
2nd ,,	0	37	37
3rd ,,	3	40	43
4th ,,	0	47	47
Totals	4	184	188
1880.			
1st Quarter	2	45	47
2nd ,,	3	27	30
3rd ,,	8	36	44
4th ,,	3	62	65
Totals	16	170	186
1881.			
1st Quarter	8	36	44
2nd ,,	8	79	87
3rd ,,	1	91	92
4th ,,	0	127	127
Totals	17	333	350
1882.			
1st Quarter	0	90	90
2nd ,,	54	120	174
3rd ,,	38	197	235
4th ,,	13	220	233
Totals	105	627	732
1883.			
1st Quarter	46	120	166
2nd ,,	160	157	317
3rd ,,	481	198	679
4th ,,	103	163	566
Totals	1,090	638	1,728
1884.			
1st Quarter	359	41	400
2nd ,,	56	94	150
3rd ,,	12	124	136
4th ,,	10	101	111
Totals	437	360	797
1885.			
1st Quarter	66	59	125
2nd ,,	4	37	41
3rd ,,	9	50	59
4th ,,	2	58	60
Totals	81	204	285

City Hospital Cases admitted each year—*continued.*

DATE.	Smallpox.	Scarlatina.	Total Cases.
1886.			
1st Quarter	1	66	67
2nd "	1	98	99
3rd "	0	114	114
4th "	0	150	150
Totals	2	428	430
1887.			
1st Quarter	0	100	100
2nd "	1	93	94
3rd "	0	142	142
4th "	9	103	112
Totals	10	438	448
1888.			
1st Quarter	13	69	82
2nd "	4	86	90
3rd "	1	174	175
4th "	0	199	199
Totals	18	528	546
1889.			
1st Quarter	0	188	188
2nd "	0	274	274
3rd "	0	538	538
4th "	0	801	801
Totals	0	1801	1801
1890.			
1st Quarter	0	488	488
2nd "	0	642	642
3rd "	0	719	719
4th "	0	676	676
Totals	0	2525	2525
1891.			
1st Quarter	1	268	269
2nd "	14	267	281
3rd "	22	358	380
4th "	7	308	315
Totals	44	1201	1245

NOTE.—In the fourth quarter of 1891 there were twenty-four cases not included in the above figures admitted to the Hospital from the recently annexed districts of Balsall Heath, Harborne, and Saltley.

DISINFECTING STATION.

Disinfecting Station.

In the following Table will be found the numbers of articles disinfected at the Bacchus Road Station during the past eight years. The total number treated last year was a very large one, though lower than in 1890.

ARTICLES DISINFECTED.	1884.	1885.	1886.	1887.	1888.	1889.	1890.	1891.
Beds	855	259	481	517	586	1,176	1,441	1,280
Mattresses ...	592	197	390	311	419	207	349	464
Sheets	1,033	279	409	396	259	898	1,278	1,337
Blankets ...	1,749	376	442	359	357	1,122	1,834	1,506
Counterpanes ...	593	236	351	308	361	958	1,156	1,235
Pillows & Bolsters	2,325	603	1,017	888	1,164	2,278	3,222	2,896
Other Articles ...	5,502	2,444	2,736	2,156	4,506	4,149	13539	9,449
Totals ...	12,649	4,394	5,826	4,935	7,652	10788	22819	18,167

MORTUARIES.

Mortuaries.

I am indebted to Mr. Farndale, Chief Constable, for the figures in the Table below, which shows the numbers of bodies deposited in the Mortuaries of the City during the past ten years.

	1882.	1883.	1884.	1885.	1886.	1887.	1888.	1889.	1890.	1891.
Moor Street ...	30	76	58	66	106	124	56	103	61	53
Ladywood Rd.	17	10	23	9	12	3	11	7	6	9
Kenyon Street	22	46	42	44	55	55	35	33	31	37
Duke Street ...	17	10	18	38	28	41	17	20	31	49
Moseley Street	25	26	35	37	39	43	19	11	22	21
Totals ...	111	168	176	194	240	266	138	174	151	169

WATER SUPPLY.

Water Supply.

The water supplied by the Corporation continues of much the same quality as usual, though the hardness is several degrees higher.

Water Supply—*continued.*

Many complaints have been received of the objectionable quality of the town supply. On some occasions it has been turbid, and occasionally objectionable in odour, due principally to the decay of certain vegetable growths which are very liable to occur in streams and open reservoirs.

Well Waters.

During the year I analysed six samples of well water, all of which showed dangerous pollution. Five of the wells were closed. The results of analysis of the monthly samples from the Corporation mains, and of the six samples of well-water, are given in Table XI.

Plant's Brook.

At the request of the Water Committee, I analysed three samples of water from Plant's Brook, which serves as one source of supply for the Corporation water. I found it to be quite equal in quality to the water usually supplied in the Corporation mains after it had been stored in the reservoir and submitted to the usual filtration process.

Proposed new Water Supply.

The Water Committee also requested me to make an inspection of the watersheds of the rivers Elan and Claerwen, from which it is proposed to draw water for the supply of the city, and I accordingly accompanied the Committee on their tour of inspection in February, 1891. I found that the gathering ground was almost exclusively uncultivated upland, devoted to the purpose of sheep-farming. As a consequence human habitations were remarkable for their rarity. This I considered a most fortunate circumstance, as such conditions reduce to a minimum the possibility of dangerous pollution of the water. The geological formation of the area is that known as the Lower Silurian, consisting of clay-slate, an impervious and insoluble mineral, composed almost entirely of silicate of alumina, or clay, with a very little iron, but no appreciable quantity of lime.

I took samples from both the Elan and Claerwen, and, on analysis, found the water to be clear, soft, and palatable. It was perfectly bright and colourless in a glass, and had but a very little colour when seen in a depth of two feet. The little colour there was was due to the solution of a small quantity of the colouring matter of the peat, which formed a small part of the surface of the watershed. The water showed what may be considered absolute freedom from animal pollution, and was a most excellent water for all practical purposes, domestic or otherwise. Its great softness formed a decided economical recommendation as regards cooking, washing, boiler use, and industrial applications generally.

The money saving by the general use of such water for washing alone is very large, to say nothing of the advantages it brings in relation to boiler use, both domestic and industrial,

Proposed new Water Supply—*continued.*

In washing, all the soap required to soften the water before a lather begins to be produced is wasted, and worse than wasted, for the insoluble soap formed acts injuriously by adhering to the washed surfaces like a varnish, and preventing the cleansing action of the dissolved soap.

The incrustation of boilers, produced by hard water, is a source of much expense and danger; it entails loss of money in the cost of removal of the scale or "fur," and in the waste of fuel involved, besides being one of the causes contributing to boiler explosions.

Owing to its great softness and slightly acid reaction, the water exerted a slight solvent power on lead. This action, however, would no doubt be obviated during the necessary storage and filtration; and, as it is out of the question that such pure and abundant supplies of water as are to be found in many uplands should remain unutilised by populous communities for such a trivial reason, I considered that there was no sufficient ground for objection to the adoption of the water as a source of supply for the city.

MISCELLANEOUS ANALYSES.

Miscellaneous Analyses.

During the year I have examined the following articles sent to me from the various Corporation Departments:—

Water	24
Cloth	21
Sewage	8
Articles of Food	8
White and Red Lead	6
Mortar	6
Poudrette	4
Turpentine	4
Oil	4
Chemical Refuse	2
Other Articles	5
TOTAL ...	92

PUBLIC BATHS.

Public Baths.

The number of bathers using the Corporation Baths during the year was 341,211. This is a smaller number than in most years in which all the present Baths have been in use.

RETURN OF THE NUMBER OF BATHERS AT EACH OF THE CORPORATION BATHS DURING THE LAST TEN YEARS.

	KENT STREET.			WOODCOCK STREET.			NORTHWOOD STREET.			MONUMENT ROAD.			SMALL HEATH.			TOTAL.		
Year.	Men.	Women.	Total.	Men	Women.	Total.	Men.	Women.	Total.	Men.	Women.	Total.	Men.	Women.	Total.	Men.	Women.	Grand Total.
1882	112141	8509	120650	68272	2015	70287	113036	4049	117085	—	—	—	—	—	—	293449	14573	308022
1883	101503	8025	109528	72852	2025	74877	96115	3093	99208	88073	5245	93318	8258	282	8540	366801	18670	385471
1884	115608	8812	124420	80279	2079	82358	103421	3506	106927	101173	6917	108090	23009	741	23750	423490	22055	445545
1885	90228	8749	98977	66111	1468	67579	77687	3039	80726	77791	6016	83807	17008	247	17255	328825	19519	348344
1886	83176	9009	92185	68720	1394	70114	78429	2459	80888	76750	5677	82427	13228	173	13401	320303	18712	339015
1887	87743	8588	96331	63143	1355	64498	78136	2714	80850	83963	6032	89995	24817	141	24958	337802	18830	356632
1888	86848	7848	94696	50513	1100	51613	68066	2051	70117	71911	5646	77557	6835	24	6859	284173	16669	300842
1889	99615	8873	108488	62573	1157	63730	75437	2501	77938	78974	6075	85049	11978	70	12048	328577	18676	347253
1890	98730	8477	107207	61552	1234	62786	80277	2522	82799	79047	6560	85607	8330	23	8353	327936	18816	346752
1891	98541	9064	107605	60355	1521	61876	76331	2779	79110	77591	6292	83883	8712	25	8737	321530	19681	341211

SEWERAGE WORKS.

Sewerage Works.

I am informed by the City Surveyor that at the close of the year there were 208¾ miles of sewers in the old City, under the control of the City Council.

STREETS AND ROADS.

Streets and Roads.

Of the 205½ miles of streets and roads, 201 miles had been taken over by the City Council. The remaining 4½ miles comprised 2½ miles of private roads and passages, and 2 miles of undeclared highways.

NIGHTSOIL AND REFUSE DISPOSAL.

Nightsoil and Refuse Disposal.

During the year 41,793 loads of nightsoil were removed from ashpit privies. The contents of 1,937,061 pans were collected. The loads of ashes collected from tubs in connection with pan privies, numbered 74,568; and about 20,000 loads were removed from houses provided with water-closets.

SANITARY WORK.

Sanitary Work.

A return, showing the work done by the department during the year, is given in Table V., on pages 62 and 63. The nuisances abated numbered 18,662. Over 5,000 drains were opened and cleansed from obstruction; while 1,098 were provided with efficient traps. Fifty drains running under houses were taken up and re-laid in better positions; and in 17 instances, where it was necessary to carry a drain underneath the basement, iron pipes were used for the purpose, instead of earthenware. Eight hundred and fifty-six privies, of which 106 were of the pan form, were converted to water-closets; 2,122 other privies were repaired. Fifty ashpits and privies under workshops were removed.

The number of notices issued for the abatement of nuisances was 16,035. Only 35 summonses were taken out for non-compliance with notices; 28 of them were proceeded with, the penalties amounting to £2, and the costs to nearly £12.

I remain,

Mr. Chairman and Gentlemen,

Your obedient Servant,

ALFRED HILL, M.D.,
Medical Officer of Health.

III. APPENDIX.

(TABLES, MAP, AND CHART.)

TABLE I.

BIRTHS AND DEATHS (GROSS NUMBERS).

DATE.	BIRTHS.	DEATHS.
1891	14,623	9,317
1890	14,076	9,561
1889	14,001	8,352
1888	13,673	7,835
1887	13,893	8,536
1886	14,282	8,499
1885	14,383	8,156
1884	14,991	9,043
1883	14,701	8,714
1882	14,866	8,425
1881	14,869	7,938
Average of Ten years 1881–1890 ...	14,373	8,506

NOTES.

1.—Population at Census 1891, 429,171.

2.—Population estimated to the middle of the Year 1891, 429,906.

3.—Area in Acres, 8,400.

4.—Number of Inhabited Houses in City at Census 1891, 85,624.

5.—Average number of Persons in each House at Census 1891, 5·0.

TABLE II.

Annual Rate of Mortality, Death-Rate among Children, and Deaths in Public Institutions.

DATE.	Annual rate of Mortality per 1,000 Living.	Deaths of Infants under 1 year; percentage to total Deaths.	Percentage of Deaths of Infants under 1 year to Registered Births.	Deaths of Children under 5 years; percentage to total Deaths.	Percentage of Deaths in Public Institutions to total Deaths.
1891	21·7	26·9	17·1	40·4	17·6
1890	22·0	27·1	18·4	43·7	16·5
1889	19·7	28·7	17·1	45·4	15·7
1888	18·6	26·9	15·4	43·4	15·0
1887	20·4	28·9	17·8	44·8	14·5
1886	20·5	29·6	17·6	46·5	14·5
1885	19·8	27·6	15·7	41·8	15·7
1884	21·7	28·9	17·4	47·7	13·8
1883	21·4	26·8	15·9	43·8	15·7
1882	20·8	29·1	16·5	47·2	15·4
1881	19·8	27·7	15·0	47·1	15·3
Average of 10 years 1881–1890	20·5	28·1	16·7	45·1	15·2

TABLE III.

Mortality from certain classes of Diseases, and proportion to population and to 1,000 deaths in 1891.

CLASS OF DISEASES.	Total Deaths.	Death Rate per 1,000 of the population.	Proportion of Deaths to 1,000 Deaths.
1—Seven principal Zymotic Diseases	923	2·1	99
2—Pulmonary (other than Phthisis)	2,272	5·3	244
3—Tubercular	1,040	2·4	112
4—Wasting Diseases of Infants ...	757	1·8	81
5—Convulsive Diseases of Infants...	217	0·5	23

1.—Includes Smallpox, Measles, Scarlet Fever, Diphtheria, Whooping Cough, Fever, and Diarrhœa.

3.—Includes Phthisis, Scrofula, Rickets. Tabes, and Tubercular Meningitis.

4.—Includes Marasmus, Atrophy. Debility, Inanition, and Premature Birth in Infants under one year.

5.—Includes Meningitis, Convulsions, and Teething in Infants under one year.

TABLE IV.

SHOWING THE NUMBER OF DEATHS IN THE TEN YEARS, 1881 TO 1890, FROM THE SEVEN PRINCIPAL ZYMOTIC DISEASES, AND THE NUMBER IN 1891.

	1881.	1882.	1883.	1884.	1885.	1886.	1887.	1888.	1889.	1890.	Annual Average of 10 years, 1881-1890.	Proportion of deaths to 1,000 deaths in 10 years, 1881-1890.	1891.	Proportion of deaths to 1,000 deaths in 1891.
Smallpox	6	17	110	64	12	0	2	0	0	0	21	2·5	7	0·7
Measles	132	150	155	333	119	383	237	191	197	329	223	26·2	105	11·3
Scarlet Fever ...	164	256	326	134	31	39	34	40	156	209	139	16·3	91	9·8
Diphtheria ...	57	49	46	40	46	73	56	40	50	61	52	6·1	38	4·1
Whooping Cough ...	362	319	176	289	253	94	379	235	279	203	259	30·5	284	30·5
Fever	66	87	81	84	77	65	78	64	44	61	71	8·3	78	8·4
Diarrhœa	341	535	412	737	338	729	550	305	465	434	484	56·9	320	34·3
TOTAL	1,128	1,413	1,306	1,681	876	1,383	1,336	875	1,191	1,297	1,249	146·8	923	99·1
London	13,811	13,553	10,801	13,629	11,262	11,102	12,684	10,803	9,709	12,279	11,963	145·8	9,675	107·2

TABLE V.

SUMMARY OF WORK DONE BY THE OFFICERS AND MEN EMPLOYED DURING THE YEAR ENDING DECEMBER 31ST, 1891.

(RETURN MADE BY MR. PARKER, *Inspector of Nuisances.*

	Nuisances Abated.
Defective Drains requiring opening and clearing from obstruction	5,197
,, Spout Drains	457
,, Drains not efficiently trapped	1,098
,, Sink Drains requiring disconnection from the Sewer	231
Nuisances arising from the want of drains	205
,, ,, ,, the want of an efficient supply of wholesome water	9
,, ,, ,, the keeping of fowls	330
,, ,, ,, an accumulation of water in cellars	291
,, ,, ,, the filthy condition of privies	243
,, ,, ,, foul and defective urinals	659
,, ,, ,, the overcrowding of houses	17
,, ,, ,, the want of efficient ventilation	81
Swine and Swine Styes so kept as to be a nuisance	166
Houses reported unfit for human habitation	52
Houses disinfected, cleansed, and purified, where Zymotic disease has occurred	1,321
Filthy and unwholesome Houses requiring cleansing and whitewashing	906
Defective Houses requiring repairs	774
Accumulations of wash, deposits of offensive matter, manure, &c.	990
Foul Ashpits and Privies requiring repairs	2,122
Houses where the Privies and Ashpits belonging thereto are so foul and defective as to require re-constructing to Water Closets	856
Back Yards requiring paving	502
Number of Dangerous Premises reported to the City Surveyor's Department	680
,, Defective Water Taps and Standpipes reported to the Water Department	1,054
Soil pipes of Water Closets requiring disconnecting from the interior of dwelling houses	76
Drains in Cellars requiring disconnection	112
Disconnected Sink Drains requiring trapping	183
Ashpits and Privies under rooms and workshops	50
Total	18,662

Number of Notices issued for the abatement of Nuisances during the Year ending December 31st, 1891	16,035
Number of Cases Summoned	35
,, Convicted	28
,, Withdrawn	7
Amount of Costs	£11 17 5
,, Penalties	2 0 0

COW SHEDS.

No. of Visits to Cow Sheds	2,047

MILKSHOPS.

No. of Milkshops Registered during the Year	127
No. of Visits to Milk Shops and Dairies	2,852

BAKEHOUSES.

No. of Visits to Bakehouses	976

SMOKE NUISANCES.

No. of Observations made by the Inspectors	5,933
,, Manufacturers Reported for the emission of dense smoke	271
,, ,, Cautioned	176
,, ,, Summoned	101
Amount of Penalties	£88 10 0
,, Costs	£49 5 10

COMMON LODGING HOUSES.

No. of Registered Common Lodging Houses	83
,, Lodgers allowed	1,933
,, Visits by day	7,849
,, Visits by night	1,106
,, Lodgers found occupying the Houses	17,453
,, Houses Registered under the Public Health Act, 1875	125
,, Lodgers allowed	699
,, Persons Summoned	6

THE CANAL BOATS ACTS, 1877 AND 1884.

No. of Canal Boats inspected during the Year	778
,, Canal Boats registered during the Year	37
,, Persons Summoned	0

SLAUGHTER HOUSES.

(Return made by MR. BIRCKLEY, *Superintendent of the Markets.)*

No. of Visits	9,677
Voluntary Surrenders of Meat	881
Seizures of Bad Meat	16
Weight Destroyed	233,838 lbs.
Voluntary Surrenders of Fish, &c.	152
Seizures of Fish, &c.	1

CONTAGIOUS DISEASES (ANIMALS) ACT.

(Return made by MR. BIRCKLEY, *Superintendent of the Markets.)*

No. of Visits to Railway Stations	907
No. of Visits to Cow Houses	274

TABLE VI.

METEOROLOGICAL CONDITION OF THE AIR, TEMPERATURE OF THE GROUND, AND AMOUNT OF RAINFALL FOR THE YEAR ENDING DECEMBER 31ST, 1891.

Observed at 9·0 a.m. at Oakwood, Acock's Green, by myself and my son, Mr. H. GROSVENOR HILL.

The Instruments are about 430 feet above the mean level of the sea.

1891.	Pressure of Air.	TEMPERATURE.					Degree of Humidity. Complete Saturation = 100	RAINFALL. Gauge 1 foot diameter. Receiving Surface 1 foot above the ground.	
	Barometer	Of the Air.			Of the Ground.				
Months.	Mean Monthly Reading (corrected and reduced to 32 degrees Fahrenheit)	Highest in Shade.	Lowest in Shade.	Mean Temperature in the Month.	1 foot deep.	4 feet deep.		Depth of Rain deposited upon a square foot of surface, in inches and parts.	Number of Days on which Rain fell, when 5 100ths of an inch or more was measured.
	In Parts.	Dg. Prts.	Dg. Prts.	Dg. Prts.	Dg. Prts.	Dg. Prts.		In Parts.	
January ..	29°·709	51°·9	14°·0	33°·2	35°·4	38°·6	97	2·44	10
February ...	30·000	63·4	23·3	38·8	38·7	40·2	91	0·12	1
March	29·379	64·2	22·0	39·5	39·2	40·6	84	1·62	9
April	29·542	58·5	25·0	42·9	41·9	41·7	80	2·15	9
May	29·341	78·0	31·0	49·5	48·2	46·1	78	3·99	14
June	29·595	76·0	41·0	58·9	55·8	51·0	82	2·09	8
July	29·481	80·5	42·5	59·0	57·8	54·8	86	2·54	11
August ...	29·345	74·0	40·0	58·1	56·3	54·4	88	3·47	15
September ...	29·529	83·0	42·0	58·2	55·5	54·3	85	1·44	10
October ...	29·277	63·0	27·0	48·8	49·8	51·4	91	6·33	18
November ...	29·347	55·0	24·0	41·2	43·2	46·7	93	3·14	11
December ...	29·472	55·0	16·5	38·5	39·3	43·3	91	3·41	18

PRICES OF COAL, FLOUR, POTATOES, AND BUTCHERS' MEAT, AND THE NUMBER OF PAUPERS RELIEVED IN THE PARISH OF BIRMINGHAM DURING EACH OF THE FIVE YEARS ENDED MICHAELMAS, 1887-1891.

Years.	Average Prices of Food and Fuel.				PAUPERISM. Weekly Average of Paupers relieved during the Year.	
	Coal per ton.	Flour per 224lbs.	Potatoes per ton.	Butchers' Meat per lb.	In-door.	Out-door.
1891	9/7	22/9	80/-	Beef -/4½ Mut'n -/7¼	2,688	1,058
1890	9/8	20/-	60/-	Beef -/4¾ Mut'n -/8	2,680	1,138
1889	9/3	20/-	70/-	Beef -/5 Mut'n -/8	2,876	1,591
1888	9/-	20/-	70/-	Beef -/4½ Mut'n -/6½	2,792	2,370
1887	8/2	22/-	82/-	Beef -/4 Mut'n -/6¾	2,778	2,863

TABLE VII.

RAINFALL AND TEMPERATURE IN EACH MONTH AND YEAR FROM 1881 TO 1891.

MONTH.	1881.			1882.			1883.			1884.			1885.			1886.			1887.			1888.			1889.			1890.			Average for 10 yrs. 1881—1890.			1891.		
	Rainfall.	No. of days on which 5-100ths of an inch or more was measured.	Temperature. °	Rainfall.	No. of days on which 5-100ths of an inch or more was measured.	Temperature. °	Rainfall.	No. of days on which 5-100ths of an inch or more was measured.	Temperature. °	Rainfall.	No. of days on which 5-100ths of an inch or more was measured.	Temperature. °	Rainfall.	No. of days on which 5-100ths of an inch or more was measured.	Temperature. °	Rainfall.	No. of days on which 5-100ths of an inch or more was measured.	Temperature. °	Rainfall.	No. of days on which 5-100ths of an inch or more was measured.	Temperature. °	Rainfall.	No. of days on which 5-100ths of an inch or more was measured.	Temperature. °	Rainfall.	No. of days on which 5-100ths of an inch or more was measured.	Temperature. °	Rainfall.	No. of days on which 5-100ths of an inch or more was measured.	Temperature. °	Rainfall.	No. of days on which 5-100ths of an inch or more was measured.	Temperature. °	Rainfall.	No. of days on which 5-100ths of an inch or more was measured.	Temperature. °
January ...	0·96	4	28·5	2·41	7	40·5	4·21	14	40·3	3·04	13	43·2	1·96	9	35·9	1·95	12	35·2	2·43	11	34·1	0·90	7	37·0	0·80	3	36·4	3·07	19	40·7	2·17	10	37·2	2·44	10	33·2
February ...	3·43	13	36·3	2·15	5	41·9	3·53	13	42·4	1·66	11	40·8	3·40	9	42·2	1·21	4	33·2	0·65	4	38·3	0·91	8	35·1	2·17	12	37·1	0·70	3	36·9	2·00	8	38·4	0·12	1	38·8
March	2·37	11	41·1	2·57	6	45·6	1·44	9	35·1	2·74	7	43·1	1·02	7	40·2	3·26	13	38·7	1·99	8	37·9	2·96	15	37·6	3·32	8	40·0	1·74	13	43·3	2·34	10	40·3	1·62	9	39·5
April	0·78	3	44·3	4·18	17	47·0	0·98	6	47·1	1·62	9	44·2	2·99	11	45·8	2·20	9	45·7	1·33	8	43·7	1·75	10	43·1	3·41	18	44·3	1·11	12	41·8	2·04	10	45·0	2·15	9	42·9
May	1·48	7	53·9	3·19	11	52·9	1·38	9	51·5	1·06	7	52·8	2·60	14	48·3	6·31	17	51·3	1·96	10	48·6	1·03	4	52·5	3·92	13	55·2	2·54	10	53·9	2·55	10	52·1	3·99	14	49·5
June	1·74	15	57·9	4·00	15	55·7	3·63	9	57·0	2·29	5	57·4	3·97	9	58·5	1·99	7	56·6	2·45	4	61·3	2·31	10	56·0	0·65	5	61·0	1·59	10	57·8	2·46	9	57·9	2·09	8	58·9
July	1·66	9	62·5	3·83	14	60·0	3·95	11	58·4	2·67	15	61·7	0·51	3	62·3	3·49	15	62·0	1·28	5	65·4	5·58	22	56·9	2·15	9	60·6	2·00	10	59·5	2·71	11	60·9	2·54	11	59·0
August ...	5·18	16	57·4	2·48	12	59·2	0·64	5	60·5	1·74	4	64·1	3·31	11	56·9	2·17	9	61·1	1·91	8	61·3	2·63	11	56·8	2·94	14	59·1	3·11	16	58·8	2·61	11	59·7	3·47	15	58·1
September ...	1·65	9	54·4	3·03	9	53·7	5·89	15	55·9	1·19	6	58·5	1·94	10	54·5	3·38	9	57·1	2·45	13	53·5	1·84	5	54·1	2·52	8	55·6	0·91	5	59·6	2·48	9	55·7	1·44	10	58·2
October ..	3·17	11	45·2	6·61	15	48·9	2·64	12	49·2	1·44	7	48·7	4·61	14	44·9	3·97	16	51·7	2·35	8	44·5	·46	3	46·3	3·11	18	46·5	1·53	9	49·4	3·00	11	47·5	6·33	18	48·8
November ...	3·13	16	47·3	4·56	18	42·0	4·47	15	41·9	1·61	8	41·8	3·46	14	41·1	2·08	10	43·6	2·49	15	39·6	4·95	15	45·8	1·27	8	43·7	3·49	15	42·5	3·15	14	42·9	3·14	11	41·2
December ..	3·40	9	37·9	4·59	18	37·8	1·02	5	40·4	2·48	12	39·5	0·65	4	37·9	4·58	16	35·0	1·78	13	36·9	2·31	9	39·8	2·29	12	37·2	0·65	5	29·2	2·37	10	37·2	3·41	18	38·5
Year	28·95	123	47·2	43·60	147	46·6	33·78	123	48·3	23·54	104	49·6	30·44	115	47·4	36·59	137	47·6	23·27	107	47·1	27·63	119	46·9	28·55	128	48·0	22·44	127	48·0	29·88	123	47·9	32·74	134	47·2

TABLE VIII.

NUMBER OF CASES REPORTED UNDER THE INFECTIOUS DISEASE (NOTIFICATION) ACT, 1889, DURING EACH WEEK OF THE YEAR 1891.

Week.		Smallpox.	Cholera.	Diphtheria.	Membranous Croup.	Erysipelas.	Scarlet Fever.	Typhus Fever	Typhoid Fever.	Relapsing Fever.	Simple Continued Fever.	Puerperal Fever.	TOTAL.
Number.	Date of ending.												
	1891.												
1	January 10th	...	...	2	2	10	29	...	11	...	1	2	57
2	,, 17th	...	...	1	3	8	32	...	6	...	...	...	50
3	,, 24th	...	...	...	2	4	32	...	6	...	1	...	45
4	,, 31st	...	...	5	...	8	34	...	9	..	...	...	56
5	February 7th	...	...	...	1	8	30	...	7	...	...	...	46
6	,, 14th	...	...	2	2	8	21	...	6	...	1	1	41
7	,, 21st	...	...	1	1	4	29	...	5	..	...	1	41
8	,, 28th	...	...	7	2	8	19	...	9	...	1	...	46
9	March 7th	...	...	1	3	6	24	...	10	...	...	...	44
10	,, 14th	...	...	4	...	4	30	...	11	...	...	..	49
11	,, 21st	..	...	4	1	4	21	...	12	...	...	...	42
12	,, 28th	1	...	2	1	5	22	..	15	...	...	...	46
13	April 4th	...	...	2	3	12	29	...	10	...	...	1	57
14	,, 11th	1	...	4	1	6	27	...	12	...	...	...	51
15	,, 18th	2	...	3	1	5	21	...	9	...	...	...	41
16	,, 25th	3	...	2	2	4	39	...	10	...	1	...	61
17	May 2nd	5	...	4	1	5	25	...	15	...	2	...	57
18	,, 9th	1	...	3	...	2	28	...	11	...	1	...	46
19	,, 16th	1	...	4	...	1	28	...	12	...	3	...	49
20	,, 23rd	1	...	...	...	1	26	...	10	...	1	1	40
21	,, 30th	...	...	...	...	8	14	...	7	...	1	...	30
22	June 6th	...	...	3	2	5	15	...	5	...	...	...	30
23	,, 13th	...	...	1	...	7	13	...	2	...	...	...	23
24	,, 20th	...	...	3	1	5	33	...	3	...	2	...	47
25	,, 27th	...	...	4	1	5	27	...	4	...	...	...	41
26	July 4th	1	...	3	1	7	19	...	7	...	1	...	39
27	,, 11th	...	...	2	1	12	18	...	3	...	1	...	37
28	,, 18th	...	...	2	1	3	36	...	6	...	2	...	50
29	,, 25th	1	...	4	...	6	18	...	1	...	...	...	30
30	August 1st	3	..	3	2	5	26	...	5	...	...	1	45
31	,, 8th	3	...	1	1	7	32	...	2	...	...	...	46
32	,, 15th	3	...	4	...	4	41	...	8	...	...	3	63
33	,, 22nd	...	...	2	1	3	36	...	2	...	...	...	44
34	,, 29th	1	...	3	...	8	32	...	10	...	1	...	55
35	September 5th	...	...	1	..	2	35	...	15	...	...	...	53
36	,, 12th	1	...	2	...	6	36	...	5	...	...	...	50
37	,, 19th	1	...	6	...	3	43	...	7	...	...	...	60
38	,, 26th	6	...	2	1	3	35	...	10	...	...	...	57
39	October 3rd	4	...	5	1	6	35	...	12	...	...	1	64
40	,, 10th	1	...	2	1	10	26	...	9	...	...	...	49
41	,, 17th	1	...	3	1	10	21	...	10	...	1	...	47
42	,, 24th	2	...	2	1	14	40	...	7	...	...	...	66
43	,, 31st	1	...	3	4	9	40	...	6	...	1	...	64
44	November 7th	...	...	2	2	10	25	...	2	...	1	...	42
45	,, 14th	...	...	3	...	14	31	...	8	...	1	...	57
46	,, 21st	1	...	9	...	15	29	...	12	...	...	...	66
47	,, 28th	1	..	9	...	11	26	...	3	...	...	...	50
48	December 5th	1	...	3	2	12	32	...	9	...	...	...	59
49	,, 12th	...	...	4	2	12	29	...	12	...	1	...	60
50	,, 19th	...	...	4	1	12	31	...	7	...	...	...	55
51	,, 26th	...	...	...	...	11	18	...	...	...	...	...	29
52	January 2nd	...	...	4	2	9	28	...	2	...	...	...	45
	TOTALS ...	47	...	150	55	367	1466		397	...	25	11	2518

TABLE IX.

NUMBER OF CASES OF INFECTIOUS DISEASE NOTIFIED IN EACH REGISTRATION SUB-DISTRICT DURING THE YEAR 1891.

REGISTRATION SUB-DISTRICT.	Smallpox.	Cholera.	Diphtheria.	Membranous Croup.	Erysipelas.	Scarlet Fever.	Typhus Fever	Typhoid Fever.	Relapsing Fever.	Simple Continued Fever.	Puerperal Fever.	Total.
1 Ladywood ..	4	...	28	11	46	158	...	44	...	...	5	296
2 St. Thomas ...	4	...	2	4	65	100	...	38	...	22	...	235
3 St. Martin ...	3	...	13	3	27	213	...	46	...	...	1	306
4 St. George ...	5	...	26	19	62	186	...	61	...	...	2	361
5 All Saints ...	15	...	20	1	52	137	...	52	...	...	1	278
6 Deritend .	10	...	34	12	57	403	.	105	...	3	...	624
7 Duddeston ...	3	...	13	4	48	218	...	47	...	...	1	334
8 Edgbaston ...	3	...	14	1	10	51	...	4	...	...	1	84
Total ...	47	...	150	55	367	1466	...	397	...	25	11	2518

TABLE X.

Return for the Period 1st July, 1890, to 30th June, 1891, respecting the Vaccination of Children whose Births were Registered in the City during the said period.

PARISH.	Number of Births returned in the "Birth List Sheets" as Registered.	Number of these Births duly entered in Columns 10, 11, and 13 of the "Vaccination Register" (Birth List Sheets), viz.:				Number of these Births which remained unentered in the "Vaccination Register" on account (as shown by Report Book) of			Number of these Births remaining neither duly entered in the "Vaccination Register" (cols. 3, 4, 5, and 6 of this Return) nor temporarily accounted for in the "Report Book" (cols. 8, 9, and 10 of this Return).
		Col. 10.	Col. 11.		Col. 13.				
		"Successfully Vaccinated."	"Insusceptible of Vaccination."	"Had Smallpox."	"Dead, Unvaccinated."	Postponement by Medical Certificate.	Removal to Districts the Vaccination Officer of which has been duly apprised.	Removal to places unknown or which cannot be reached; and cases not having been found.	
1	2	3	4	5	6	8	9	10	11
Birmingham	8,229	6,562	27	—	1,012	84	27	472	45
Aston (within the City)	5,726	4,330	18	—	753	128	24	361	112
Edgbaston (,, ,,)	360	303	—	—	33	6	8	8	2

TABLE XI.—WATER: RESULTS OF ANALYSES

Date of Receipt of Samples.	DESCRIPTION.	Temp. in Centigrade Degrees.	Total Solid Impurity.	Organic Carbon.	Organic Nitrogen.
1891.	CORPORATION SUPPLY.				
Jan. 6th	19 Court, Lower Essex Street........	2°·8	29·92	·191	·035
Feb. 3rd	6 Court, Ludgate Hill..................	7°·2	28·72	·225	·019
Mar. 2nd	Back 65, Islington Row	7°·2	32·92	·309	·017
Apr. 6th	6 Court, Bissell Street..................	6°·7	30·88	·180	·036
May 5th	66, Henley Street........................	10°·0	29·82	·093	·014
June 8th	14, Coplow Terrace, Coplow Street	12°·2	29·02	·175	·031
July 1st	5 Court, Floodgate Street.............	17°·8	27·16	·250	·042
Aug. 10th	55, Blucher Street...	14°·0	27·16	·153	·019
Sept. 2nd	2, Louisa Place, Brookfield Road ...	14°·4	28·52	·162	·033
Oct. 7th	7 Court, Cardigan Street...............	12°·8	29·22	·224	·041
Nov. 4th	2 Court, Whittall Street........... ...	9°·4	28·32	·163	·021
Dec. 8th	35, Bellis Street.....................	7°·8	29·52	·220	·030
	Average results 1891..................	10°·2	29·26	·195	·028
	,, 1890..................	11°·4	28·00	·164	·024
	,, 1889..................	11°·1	29·38	·188	·034
	,, 1888..................	10°·2	26·72	·155	·023
	,, 1887..................	10°·7	27·93	·158	·023
	WELL WATERS.				
Apr. 29th	280 and 282, Bordesley Green........	—	129·2	—	Small
May 13th	143 and 144, Larches Street	—	151·2	—	Very large
May 20th	87 and 88, Gladstone Road...........	—	61·2	—	—
July 4th	62, Metchley Lane	—	70·60	—	Moderate
July 4th	64 and 66, Metchley Lane	—	131·30	—	Very large
Oct. 19th	1, Stone Road..........................	—	117·60	—	Very large

EXPRESSED IN PARTS PER 100,000.

Ammonia	Nitrogen as Nitrates and Nitrites.	Total Combined Nitrogen.	Previous Sewage or Animal Contamination. (Estimated.)	Chlorine.	Hardness.			REMARKS.
					Temporary.	Permanent.	Total.	
·001	·242	·278	2,110	1·7	8°·2	17°·1	25°·3	Clear, Greenish Blue
·001	·253	·273	2,220	2·1	8°·3	11°·8	20°·1	Clear, Greenish Blue
·002	·198	·216	1,670	1·7	6°·3	18°·3	24°·6	Clear, Yellowish Green
·001	·154	·191	1,230	1·6	9°·1	15°·3	24°·4	Clear
·002	·418	·433	3,870	3·3	3°·9	13°·2	17°·1	Clear
none	·209	·240	1,770	2·2	7°·5	12°·9	20°·4	Clear
·001	·110	·153	790	1·6	4°·2	13°·0	17°·2	Fairly clear, Greenish Yellow
·001	·242	·262	2,110	2·3	8°·5	9°·4	17°·9	Clear, Greenish Blue
·001	·132	·166	1,010	2·0	4°·0	15°·0	19°·0	Clear, Yellowish Green
·001	·121	·163	890	1·7	3°·2	18°·0	21°·2	Clear, Greenish Yellow
none	·275	·296	2,440	2·0	3°·3	16°·3	19°·6	Clear, Greenish Yellow
none	·209	·239	1,770	1·7	8°·4	12°6	21°·0	Clear, Yellowish Green
·001	·214	·243	1,820	2·0	6°·2	14°·4	20°·6	
·001	·234	·259	2,030	1·8	6°·6	9°·8	16°·4	
·001	·219	·253	1,880	1·7	5°·7	9°·6	15°·3	
·001	·229	·253	1,980	1·6	5°·5	9°·9	15°·4	
·001	·272	·300	2,410	1·7	8°·5	12°·4	20°·9	
·001	2·31	2·311	22,790	5·5	—	—	—	Clear
·001	4·51	4·511	44,794	10·5	—	—	—	Very slightly turbid
2·500	none	—	20,860	6·8	—	—	—	Turbid, straw colour, bad odour
·001	4·29	4·291	42,590	6·8	—	—	—	Clear
·230	5·94	6·129	60,970	14·9	—	—	—	Slightly turbid
·004	2·97	2·973	29,410	6·7	—	—	—	Slightly turbid

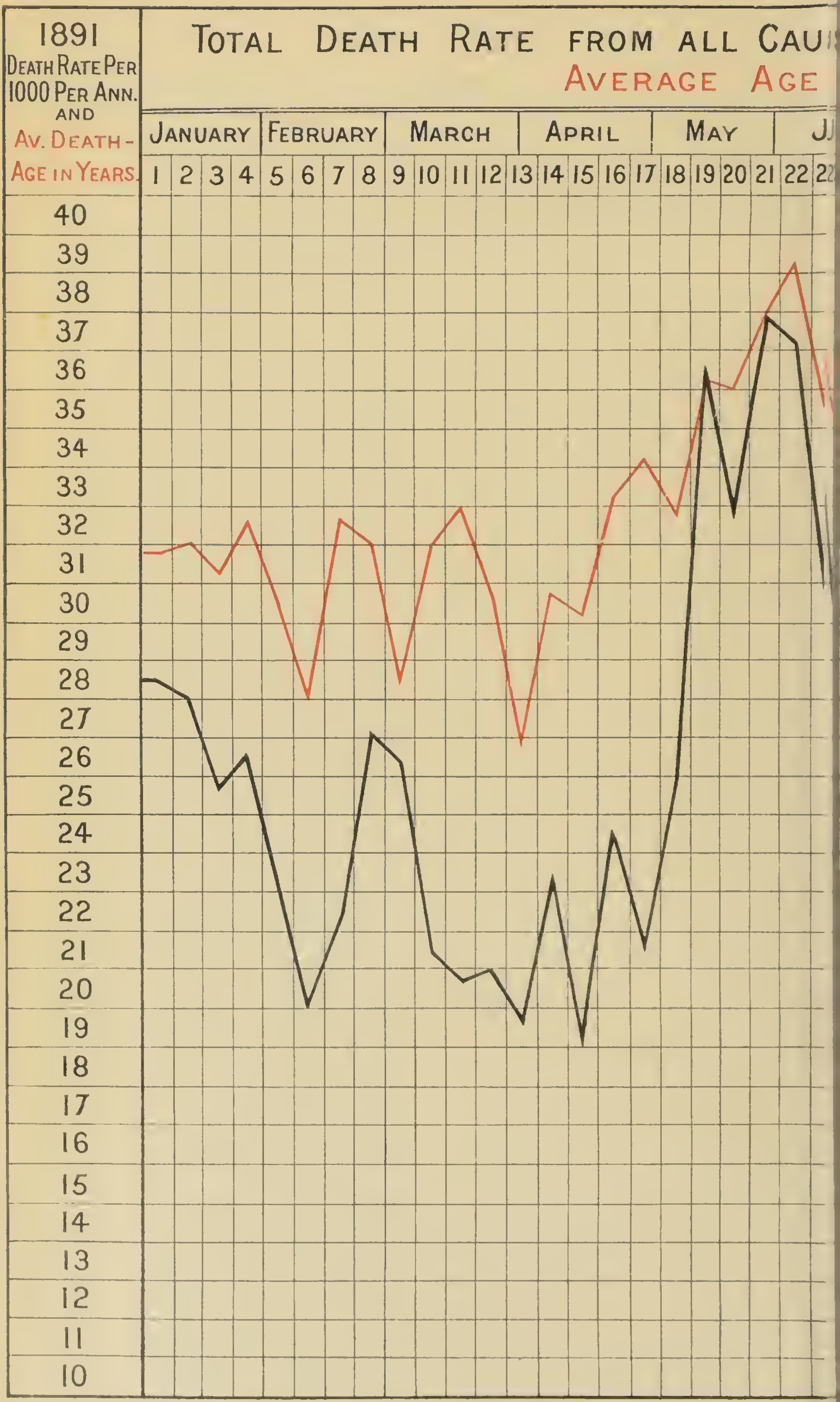
Table of the Number of Deaths occurring in each Street in the City of Birmingham during the Year 1891.

STREETS.	Zymotic Diseases.	Other Diseases.
A		
Abberley Street	1	1
Abbey Street		8
Aberdeen Street ..	1	15
Ada Street		1
A B Row		
Adams Street	5	40
Adderley Street ..	4	13
Adelaide Street ..	1	13
Albany Road		
Albert Street		1
Albion Street		3
Alcester Street ..		17
Alexandra Road ..	2	2
Alexandra Street ..		10
Alfred Street	1	1
Allcock Street ..	1	7
Algernon Road ..		2
Allen's Road		8
Allesley Street ..		14
Allison Street	1	20
All Saints' Road ..		3
All Saints' Street ..		1
Alma Crescent ..	1	4
Alma Street		
Alston Street		15
Ampton Road ..		1
Anderton Road ..	1	7
Anderton Street ..		14
Andover Street ..		
Angelina Street ..	1	21
Argyle Street	1	8
Armoury Road ..		
Arsenal Street ..		1
Arthur Road		1
Arthur Street	3	24
Artillery Street ..	3	2
Ashford Street ..	1	4
Ashley Street	1	17
Ashted Row	2	14
Aston Brook Street ..	1	4
Aston Road	5	36
Aston Street	1	8
Asylum Road	2	7
Athole Street		1
Atlas Road		3
Auckland Road ..		6
Auckland Street ..	1	
Augusta Street ..		1
Augustus Road ..	1	1
Austin Street		1
B		
Bacchus Road ..		3
Bagot Street	1	19
Bailey Street		
Baker Street	1	11
Baker Street South ..		1
Balsall Heath Road ..		7
Banbury Street ..		2
Barford Road		5
Barford Street ..	4	21
Barford Street South ..		
Barker Street		4
Barlow's Road ..		
Barn Street	5	11
Barr Street	7	31
Barrack Street ..		1
Bartholomew Row ..		4
Bartholomew Street ..	1	8
Barwell Road.. ..		4
Barwick Street ..		
Baskerville Passage ..		
Baskerville Place ..		
Bath Passage		
Bath Row	1	12
Bath Street		2
Beach Street	1	15
Beak Street		3
Beaufort Road ..		3
Bedford Road.. ..	1	7
Beechfield Road ..		1
Belgrave Road ..	1	9
Bell Barn Road ..	4	37
Bellefield Road ..	2	3
Bellis Street		4
Bell Street		
Belmont Passage ..		3
Belmont Row	1	5
Benacre Street ..	1	22
Bennett's Hill ..		2
Berkley Street ..	1	1
Berners Street ..		4
Bertram Road ..		4
Betholom Row ..		
Birchall Street ..	1	9
Birchfield Road ..		
Bishopsgate Street ..	4	17
Bishop Street.. ..	1	16
Bishop Street South ..		
Bissell Street		14
Blake Lane		
Blews Street	2	16
Blews Street West ..	4	7
Bloomsbury		
Bloomsbury Street ..	4	27
Blucher Street ..	4	6
Blythe Street	2	10
Bolton Road	3	33
Bolton Street		1
Bond Street		
Bordesley Green ..	4	17
Bordesley Green Road		3
Bordesley Park Road ..	5	16
Bordesley Street ..	5	24
Bow Street	1	8
Bowyer Street ..		3
Bracebridge Street ..	3	31
Bradford Street ..	3	26
Braithwaite Road ..	2	
Branston Street ..		7
Brasshouse Passage ..		1
Brass Street		3
Bread Street	2	8
Brearley Street ..	5	45
Brewery Street ..		1
Brickiln Street ..		
Bridge Road		
Bridge Row		2
Bridge Street	3	
Bridge Street West ..	5	32
Bristol Road	1	16
Bristol Street		16
Broad Street	2	12
Bromsgrove Street ..		20
Brookfield Road ..		5
Brook Road		
Brook Street		1
Broom Street	1	2
Brueton Street ..		
Buckingham Street ..	1	16
Buck Street		2
Bullock Street.. ..	2	10
Bull Ring		2
Bull Street		1
Burbury Street ..	1	11
Burlington Passage ..		
Butler Street		1
Butler Street South ..		3
Butlin Street		2
C		
Calthorpe Road ..		1
Cambridge Crescent ...		1
Cambridge Street ..		2
Camden Drive ..		
Camden Grove ..		
Camden Street ..	1	37
Camp Hill		15
Camp Street	2	7
Canal Street	1	2
Cannon Street ..		
Cape Lane		3
Cape Street		3
Cardigan Street ..	1	11
Carlisle Street ..	1	5
Carlton Road		8
Carlyle Road		2
Carnarvon Road ..		
Caroline Street ..		1
Carpenter Road ..		2
Carrington Road ..	2	3
Carr's Lane		
Cartland Road ..		1
Carver Street	2	12
Castle Street	1	1
Cathcart Street ..		9
Cato Street	3	21
Cato Street North ..	1	4
Cattell Road	1	23
Cattell Grove ..		2
Cavendish Road ..		2
Cecil Street	1	16
Centre Row	1	1
Chad Road		2
Chandos Road ..		2
Chapel House Street ..		3
Chapel Street		5
Chapman Road ..		3
Charles Arthur Street ..	2	9
Charles Henry Street ..	4	21
Charles Road	1	1
Charlotte Road ..		1
Charlotte Street ..		6
Chattaway Street ..		3
Cheapside .. .	4	51
Cheatham Street ..		4
Chequers Walk ..		1
Cherry Street		2
Cherry Wood Road ..		3
Chester Street.. ..	1	2
Cheston Road ..		1
Christ Church Passage		
Church Road, Duddeston	1	3
Church Road, Edgbaston		1
Church Street		2
Claremont Road ..	1	2
Clarence Road ..		
Clarendon Road ..		1
Clark Street	1	20
Claverdon Street ..	1	7
Claybrook Street ..	1	3
Clement Street ..		3
Cleve Terrace ..		
Clissold Street ..	2	6
Cliveland Street ..		6
Clive Passage.. ..		
Clyde Street ..		10
Coleman Street ..	4	16
Coleshill Street ..	1	25
College Street	1	3
Colmore Row		2

STREETS.	Zymotic Diseases	Other Diseases
Commercial Street	1	1
Communication Row ..		2
Congreve Street ..		2
Constance Road ..		
Constitution Hill ..		9
Conybere Street ..	3	18
Cook Street		9
Cooksey Road ..	8	18
Cope Street		3
Coplow Street ..	1	9
Coralie Street ..		6
Cornwall Street ..		
Corporation Street ..		2
Coventry Road ..	1	35
Coventry Street ..	1	14
Cowper Street ..	2	7
Cox Street		4
Coxwell Road ..		2
Crabtree Road ..		10
Cranemore Street ..	2	3
Cregoe Street	2	19
Crescent		26
Crescent Wharf ..		
Crompton Road ..		1
Cromwell Street ..	6	40
Crooked Lane		
Cuckoo Road	3	20
Cumberland Street ..	1	3
Curzon Street		7
Cuthbert Road ..		4
D		
Dalton Street		
Dale End	1	6
Darnley Road ..		
Dart Street		2
Dartmouth Street ..	3	32
Darwin Street ..	1	32
Dawson Street ..		1
Dean Street		3
Dearman Road ..		
Denbigh Street ..		1
Derby Street	2	2
Devon Street	1	12
Devonshire Street ..	2	12
Digbeth		19
Digby Street		2
Dixon Road		3
Doe Street		6
Dolman Street ..	1	14
Dolobran Road ..		8
Don Street	1	5
Dora Road		
Dorset Road		
Dover Street		1
Dr. Johnson Passage ..		
Drury Lane		1
Dryden Road		
Duchess Road.. ..		2
Duddeston Row ..		11
Duddeston Mill Road ..	6	12
Dudley Road	2	11
Dudley Street		1
Dugdale Street ..	3	14
Duke Street	3	11
Dymoke Street ..	3	17
E		
Earl Street		
Eastern Road		
Easy Row		2
Eden Place		
Edgbaston Road ..		
Edgbaston Park Road..		2
Edgbaston Street ..	1	2
Edmund Street ..		2
Edward Road		
Edward Street ..		20
Eldon Road		1
Elkington Street ..		1
Ellen Street	1	15
Ellis Street		4
Elvetham Road ..		2
Emily Street		11
Emmeline Street ..		
Enfield Road		
Engine Street.. ..		
Erasmus Road ..	1	12
Ernest Street		
Erskine Street.. ..	1	6
Essex Street	1	11
Essington Street ..		10
Ethel Street		
Eva Road		4
Eversley Road ..	3	11
Exeter Row		
Eyre Street	1	3
F		
Factory Road		1
Falconer Road ..		
Farm Road		3
Farm Street	8	54
Farquhar Road ..		
Fazeley Street ..		9
Fisher Street	2	6
Fleet Street	1	3
Floodgate Street ..	1	7
Florence Street ..	2	7
Fordrough Lane ..		
Fordrough Street ..		1
Ford Street	3	16
Forge Street		
Forster Street.. ..		3
Foundry Road ..		5
Fowler Street	1	2
Fox Street		1
Francis Road		5
Francis Street ..	4	28
Frank Street		3
Frankfort Street ..	3	15
Franklin Street ..		3
Frederick Road ..		2
Frederick Street ..		
Freeman Road ..	1	5
Freeman Street ..		1
Freeth Street	1	12
Friston Street ..	3	12
G		
Galton Street		4
Garbett Street ..		23
Garrison Lane ..	2	28
Garrison Street ..	5	16
Gas Street		1
Geach Street	1	12
Gee Street		
Gem Street		4
George Road		5
George Street		4
George Street West ..	3	24
Gibb Street	1	
Gillott Road		7
Gladstone Road ..		8
Glebe Street	1	4
Gloucester Street ..		1
Glover Road ..		2
Glover Street ..	3	12
Godwin Street.. ..		7
Golden Hillock Road ..		10
Gooch Street	4	22
Goode Street .. :	1	5
Goodman Street ..		
Goodrick Street ..	1	2
Gopsall Street ..	1	1
Gordon Street	1	12
Gosta Green		4
Gough Road		12
Gough Street	1	4
Grace Road		5
Grafton Road		1
Graham Street ..	1	6
Grange Road	2	15
Grant Street		7
Grantham Road ..	1	5
Granville Street ..	2	12
Great Barr Street ..	2	16
Great Brook Street ..	1	28
Great Charles Street .		1
Great Colmore Street ..	1	40
Great Francis Street ..	5	51
Great Hampton Row ..	1	19
Great Hampton Street..		7
Great King Street ..	4	15
Great Lister Street ..	4	27
Great Russell Street ..	5	40
Great Tindal Street ..		16
Greenfield Crescent ..		1
Green Lane	2	27
Green Street		7
Green's Court		
Green's Village ..		
Greenway Street ..	4	24
Grosvenor Row ..		2
Grosvenor Street ..		
Grosvenor Street West	3	15
Grove Street ..		
Guest Street ..		3
Guildford Street ..		15
H		
Hadley Street.. ..		2
Hagley Road	1	13
Halberton Street ..		5
Hall Street		4
Hampton Street ..	4	16
Hampton Row ..		
Handsworth New Road		
Hanley Street ..		7
Hanover Street ..		4
Harborne Road ..		
Harding Street ..		
Harding St., St. George's		
Harding St., All Saints'	1	2
Harford Street ..		2
Harrison's Road ..		3
Hatchett Street ..	2	20
Hawkes Street ..	3	9
Hawthorn Road ..		
Heath Mill Lane ..	2	7
Heath Street	1	28
Heath Street South ..		6
Heaton Street.. ..	1	17
Helena Street.. ..		1
Heneage Street ..	8	40
Henley Street	4	13
Henn's Walk		
Henrietta Street ..		4
Henry Street	4	18
Herbert Road	1	20
Hermitage Road ..		
Hickman Road ..		4
Hick Square		
Hick Street		11
Highfield Road ..		2
Highgate Road ..	3	2
Highgate Place ..		2
Highgate Square ..		
Highgate Street ..	2	25
High Park Street ..		8

STREETS.	Zymotic Diseases.	Other Diseases.
Summer Road... ..	4	13
Summer Street ..		
Sun Street	1	6
Sun Street West ..	1	6
Sutton Street		1
Swallow Street ..		7
Swan Passage ..		
Sydenham Road ..		
Sydney Road	1	4
T		
Talbot Street		8
Talfourd Street ..	4	9
Tanter Street		
Taylor Street		2
Templefield Street ..		4
Temple Row		
Temple Row West ..		
Temple Street.. ..		1
Tenby Street	1	2
Tenby Street North ..		1
Tennant Street ..	1	20
Theodore Street ..	2	8
Theresa Road	1	2
Thimble Mill Lane ..	1	13
Thomas Street ..		3
Thorp Street		5
Tillingham Street ..	1	6
Tindal Street		9
Tower Street	3	21
Trafalgar Road ..		
Trent Street	1	8
Trevor Street	1	11
Trinity Street.. ..		1
Trinity Terrace ..		1
Tudor Street		9
Turner Street		6
Tyndall Street.. ..	1	
U		
Unett Street ..	2	17
Union Passage ..		
Union Street		1
Union Terrace ..		
Upper Dean Street ..	1	2
Upper Gough Street ..	1	8
Upper Highgate Street	3	6
Upper Hockley Street..		
Upper Marshall Street..	1	3
Upper Mill Lane ..		
Upper Priory	1	3
Upper Ryland Road ..	2	5
Upper Trinity Street ..	2	10
V		
Varna Road		11
Vaughton Street ..		13
Vaughton Street South		4
Vauxhall Grove ..		4
Vauxhall Road ..	2	19
Vauxhall Street ..		2
Ventnor Road.. ..		4
Vere Street		6
Viaduct Street.. ..		1
Vicarage Road ..		1
Victoria Grove ..		1
Victoria Street ..	1	8
Villa Street	1	9
Villiers Street	1	1
Vine Street		2
Vittoria Street.. ..	1	3
Vyse Street .. .		3
W		
Walter Street	3	17
Ward Street	1	6
Warner Street.. ..		2
Warstone Lane ..	1	14
Warstone Parade East..		1
Warwick Passage ..		
Warwick Street ..	1	5
Washington Street ..		4
Waterloo Street ..		
Water Street		3
Watts Road		
Waterworks Road ..	2	1
Watery Lane	4	31
Weaman Row		1
Weaman Street ..		13
Wellesley Street ..	1	9
Wellington Passage ..		
Wellington Road ..		5
WellingtonSt.WinsonGr		13
WellingtonSt.IckniedSq		3
Well Lane		
Well Street	2	14
Westbourne Road ..		2
Western Road... ..		
Westfield Road ..		2
Westley Street ..		4
Weston Street		2
Wharf Lane		2
Wharf St., All Saints ..	1	1
Wharf St., St. Thomas's		
Wharton Street ..	1	1
Wheeler Street ..	3	21
Wheeley's Lane ..		4
Wheeley's Road ..		1
White Lion Passage ..		
White Road	1	10
Whitehall Road ..		1
Whitmore Road ..	1	6
Whitmore Street ..	2	6
Whittall Street ..	1	1
Wiggin Street ..		6
William Edward Street		9
William Henry Street ..	1	3
William St., St. Thomas'	1	21
William Street, Deritend		2
William Street North .	1	2
Willis Street	2	15
Willow Avenue ..		1
Wilton Street	2	2
Windmill Street ..		
Windsor Street ..	1	28
Winson Green Road ..	2	8
Winson Street... ..		9
Witton Street	2	8
Wolseley Street ..	1	
Woodbourne Road ..		
Woodcock Street ..		8
Wood Street		1
Worcester Street ..	1	2
Worcester Wharf ..		1
Wordsworth Road ..		3
Wrentham Street ..		15
Wright Street		16
Wrottesley Street ..		
Wyndcliffe Road ..		3
Wyndham Road ..		
Wynn Street	1	11
X		
Y		
Yardley Road .. .		5
Yew Tree Road ..		1
York Passage		
York Road		2
York Street		1
Z		
ADDENDA.		
Canals		26
Railways		6
Not located		4
AT INSTITUTIONS		
General Hospital ..	21	290
Queen's Hospital ..	7	153
Children's Hospital ..	15	69
Workhouse	23	839
Asylum	6	121
Gaol		5
Eye Hospital ..		2
Blind Institution .		
City Hospital	74	3
Homœopathic Hospital..		8
Orthopædic Hospital ..		2
TOTALS ..	923	8394

Grand Total 9,317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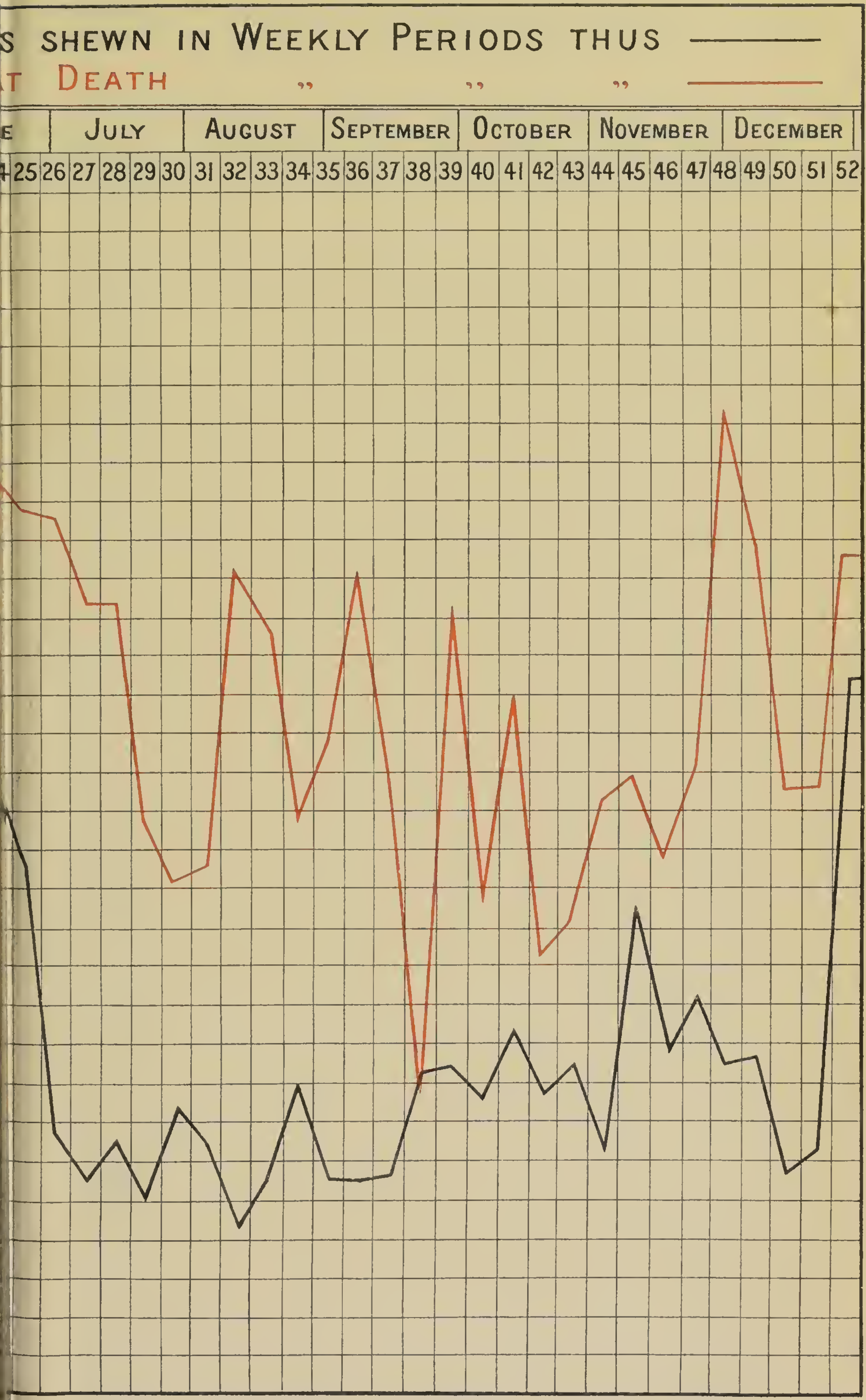
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DECEMBER
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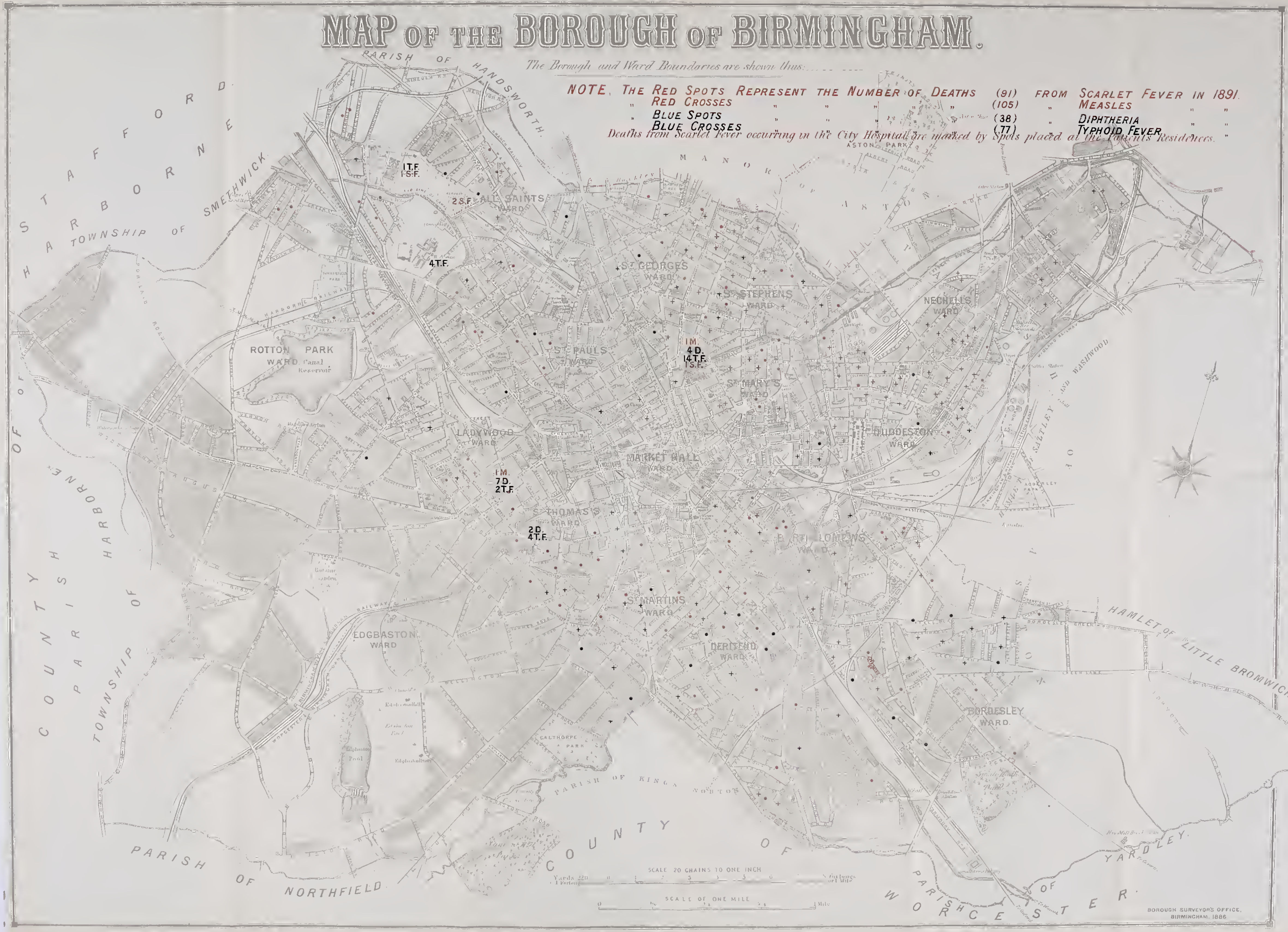
MAP OF THE BOROUGH OF BIRMINGHAM.

The Borough and Ward Boundaries are shown thus:

NOTE. THE RED SPOTS REPRESENT THE NUMBER OF DEATHS (91) FROM SCARLET FEVER IN 1891.
" RED CROSSES " " " " " (105) " MEASLES " "
" BLUE SPOTS " " " " " (38) " DIPHTHERIA " "
" BLUE CROSSES " " " " " (77) " TYPHOID FEVER " "

Deaths from Scarlet Fever occurring in the City Hospital are marked by Spots placed at the Patients' Residences.



25 MAY. 92

REPORT

ON

ADULTERATION.

City Analyst's Laboratory,
The Council House, Birmingham,
March 4th, 1892.

TO THE HEALTH COMMITTEE.

Mr. Chairman and Gentlemen,

I beg to report that during the year 1891 I analysed 811 samples of food and drugs. Four of them were submitted to me by private purchasers; the others were obtained by Mr. Parker, Inspector of Nuisances.

The following Table shows the numbers of samples of various articles analysed during the year:—

Milk	295	samples
Butter	115	,,
Bread	86	,,
Flour	49	,,
Ale	48	,,
Oatmeal	48	,,
Coffee	27	,,
Vinegar	23	,,
Pepper	16	,,
Whiskey	12	,,
Cheese	10	,,
Mustard	10	,,
Lard	7	,,
Linseed Meal	7	,,
Arrowroot	6	,,
Cream of Tartar ...	6	,,
Glycerine	6	,,
Tartaric Acid	6	,,
Margarine	5	,,
Chicory	4	,,
Raspberry Jam	3	,,
Sugar	3	,,
Sugar Confectionery ...	3	,,
Powdered Cinnamon ...	2	,,
Tincture of Benzoin ...	2	,,
Tincture of Opium ...	2	,,
Apricot Jam	1	,,
Bitartrate of Potash ...	1	,,
Cream	1	,,
Citrate of Magnesia ...	1	,,
Precipitated Sulphur ...	1	,,
Sublimed Sulphur ...	1	,,
Seidlitz Powder ...	1	,,
Spirits of Nitrous Ether	1	,,
Tinned Apricots... ...	1	,,
Yellow Wax	1	,,
Total	811	Samples.

In the subjoined list will be found particulars of the adulterated samples, as well as of four samples of Margarine which were not labelled as required by the Margarine Act.

NO.	DATE.	ARTICLE.	REMARKS.
14—	Jan. 6th ...	Butter	Consisted of margarine. Fined 40/- and costs.
18—	„ 6th ...	Butter	Consisted of margarine. Fined £5 and costs.
19—	„ 6th ...	Butter	Consisted of margarine. Same vendor as in No. 18.
42—	„ 26th ...	Milk	Adulterated with 33 % of water. Fined £10 and costs.
61—	Feb. 3rd ...	Milk	Deprived of 11 % of its fat. Cautioned by Health Sub-Committee.
77—	„ 11th ...	Butter	Consisted of margarine. Fined £1 and costs.
79—	„ 11th ...	Butter	Consisted of margarine. Fined £3 and costs.
105—	„ 18th ...	Milk	Adulterated with 23 % of water. Same vendor as in No. 106.
106—	„ 18th ...	Milk	Adulterated with 24 % of water. Fined £10 and costs.
114—	„ 26th ...	Milk	Adulterated with 19 % of water, and deprived of 22 % of its fat. Fined 20s. and costs.
122—	„ 26th ...	Milk	Adulterated with 11 % of water. Fined 20/- and costs.
128—	„ 26th ...	Milk	Adulterated with 12 % of water. Fined 10/- and costs.
129—	„ 26th ...	Milk	Adulterated with 4 % of water, and deprived of 10 % of its fat. Cautioned by Health Sub-Committee.
133—	Mar. 5th ...	Milk	Adulterated with 8 % of water. Cautioned by Health Sub-Committee.
135—	„ 5th ...	Milk	Deprived of 19 % of its fat. Cautioned by Health Sub-Committee
142—	„ 5th ...	Margarine	Consisted of margarine: not labelled. Fined 10/- and costs.
145—	„ 5th ...	Milk	Adulterated with 14 % of water. Fined 20/- and costs.
147—	„ 5th ...	Butter	Consisted of margarine. Fined £5 and costs.
149—	„ 5th ...	Margarine	Consisted of margarine: not labelled. Fined 20/- and costs.
153—	„ 5th ..	Milk	Adulterated with 6 % of water, and deprived of 17 % of its fat. Cautioned by Health Sub-Committee.
155—	„ 9th ...	Milk	Adulterated with 3 % of water, and deprived of 20 % of its fat. Fined £5 and costs.
164—	„ 14th ..	Raspberry Jam ...	Artificially coloured with harmless material.
198—	April 2nd ...	Milk	Adulterated with a small percentage of water.
201—	„ 2nd ...	Milk	Deprived of 13 % of its fat. Cautioned by Health Sub-Committee.
202—	„ 2nd ...	Milk	Deprived of 23 % of its fat. Fined 5s. and costs.
208—	„ 14th ..	Beer	Contained 72 grains of salt per gallon.
215—	„ 16th ...	Milk	Adulterated with a few per cent. of water.

NO.	DATE.	ARTICLE.	REMARKS.
258	Apr. 30th	Milk	Adulterated with 5 % of water. Cautioned by Health Sub-Committee.
265	„ 30th	Milk	Deprived of 19 % of its fat. Fined £3 and costs.
268	„ 30th	Milk	Adulterated with 7 % of water, and deprived of some of its fat. Fined £2 and costs.
281	May 5th	Milk	Deprived of 21 % of its fat. Fined £3 and costs.
289	„ 20th	Milk	Adulterated with 12½ % of water. Fined 20/- and costs.
294	„ 20th	Milk	Deprived of 23 % of its fat. Fined 5/- and costs.
304	„ 21st	Milk	Deprived of 16 % of its fat.
305	„ 21st	Milk	Deprived of 18 % of its fat.
306	„ 21st	Milk	Deprived of 14 % of its fat.
321	„ 25th	Milk	Adulterated with 9 % of water. Fined £20 and costs.
322	„ 25th	Milk	Adulterated with 12 % of water. Fined £5 and costs.
323	„ 25th	Milk	Adulterated with 9 % of water. Fined £5 and costs.
334	June 8th	Milk	Adulterated with 10 % of water. Fined 20/- and costs.
352	„ 17th	Tincture of Opium	Contained only 55 % of proof spirit. Cautioned by Health Sub-Committee.
354	„ 17th	Tincture of Benzoin	Contained only 44 % of the proper ingredients. Cautioned by Health Sub-Committee.
363	„ 18th	Whiskey	Adulterated with water, being 35° below proof strength. Cautioned by Health Sub-Committee.
364	„ 18th	Whiskey	Adulterated with water, being 38° below proof strength. Cautioned by Health Sub-Committee.
365	„ 18th	Whiskey	Adulterated with water, being 41° below proof strength. Cautioned by Health Sub-Committee.
370	„ 18th	Whiskey	Adulterated with water, being 39° below proof strength. Cautioned by Health Sub-Committee.
371	„ 25th	Milk	Deprived of 17 % of its fat. Cautioned by Health Sub-Committee.
372	„ 25th	Milk	Deprived of 15 % of its fat. Cautioned by Health Sub-Committee.
393	July 3rd	Butter	Consisted of margarine. Fined 20/- and costs.
400	„ 3rd	Butter	Consisted of margarine. Fined 20/- and costs.
426	„ 10th	Butter	Consisted of margarine. Fined 20/- and costs.
428	„ 10th	Butter	Consisted of margarine. Fined 20/- and costs.
466	Aug. 6th	Tinned Apricots	Contained a little tin.
576	Sept. 4th	Butter	Consisted of margarine. Fined £5 and costs.
579	„ 10th	Milk	Adulterated with 13 % of water, and deprived of 28 % of its fat. Fined 20/- and costs.
584	„ 10th	Butter	Consisted of margarine. Paid costs.
586	„ 10th	Butter	Consisted of margarine. Fined £5 and costs,

NO.	DATE.	ARTICLE	REMARKS.
588—	Sep. 10th ...	Margarine ...	Consisted of margarine; not labelled. Fined £2 and costs.
597—	„ 16th ...	Milk	Adulterated with 8 % of water. Cautioned by Health Sub-Committee.
609—	Oct. 6th ...	Milk	Adulterated with 11 % of water. Fined 20/- and costs.
617—	„ 8th ...	Butter	Consisted of margarine. Paid costs.
622—	„ 8th ...	Butter	Consisted of margarine. Fined £3 and costs.
623—	„ 8th ...	Butter	Consisted of margarine. Fined £3 and costs.
627—	„ 14th ...	Milk	Adulterated with 16 % of water. Fined 20/- and costs.
634—	„ 14th ...	Butter	Consisted of margarine. Fined 40/- and costs
640—	„ 14th ...	Milk	Adulterated with 10 % of water. Fined 10/- and costs.
642—	„ 14th ...	Butter	Consisted of margarine. Fined 10/- and costs.
644—	„ 27th ...	Butter	Consisted of margarine. Summons dismissed.
646—	„ 27th ...	Butter	Consisted of margarine. Fined £3 and costs.
649—	„ 28th ...	Milk	Adulterated with 5 % of water, and deprived of 22 % of its fat. Fined 10/- and costs.
652—	„ 28th ...	Milk	Adulterated with 14 % of water. Fined 20/- and costs.
653—	„ 28th ...	Milk	Adulterated with 20 % of water. Fined 20/- and costs.
692—	Nov. 10th ...	Milk	Deprived of 25 % of its fat. Fined 10/- and costs.
696—	„ 10th ...	Milk	Adulterated with 10 % of water. Fined 5/- and costs.
697—	„ 10th ...	Milk	Adulterated with 18·5 % of water. Fined 5/- and costs.
698—	„ 12th ...	Butter	Consisted of margarine. Fined £10 and costs.
704	„ 14th ...	Butter	Consisted of margarine. Fined 20/- and costs.
706—	„ 14th ...	Butter	Consisted of margarine. Fined 40/- and costs.
707—	„ 14th ..	Butter	Consisted of margarine. Paid costs.
747—	„ 26th ...	Milk	Adulterated with 7 % of water. Cautioned by Health Sub-Committee.
753—	„ 26th ...	Milk	Adulterated with 5 % of water. Cautioned by Health Sub-Committee.
754—	„ 26th ...	Butter	Consisted of margarine. Paid costs.
755—	„ 26th ...	Milk	Adulterated with 12 % of water, and deprived of 19 % of its fat. Fined 10/- and costs.
756—	„ 26th ...	Milk	Adulterated with 17 % of water. Fined 20/- and costs.
758—	„ 26th ...	Milk	Deprived of 16 % of its fat. Private purchaser.
762—	Dec. 2nd ...	Ale	Contained an excess of salt.
765—	„ 2nd ...	Ale	Contained an excess of salt.
780—	„ 2nd ...	Margarine	Consisted of margarine; not labelled. Fined 40/- and costs.
787—	„ 3rd ...	Butter	Consisted of margarine. Vendor absconded.

NO.	DATE.	ARTICLE.	REMARKS.
788—	Dec. 9th ...	Milk	Adulterated with 25 % of water. Fined 10/- and costs.
789—	" 9th ...	Milk	Adulterated with 12 % of water, and deprived of 7 % of its fat. Fined 10/- and costs.
791—	" 9th ...	Skimmed Milk ...	Adulterated with 14 % of water. Fined 20/- and costs.
798—	" 11th ...	Milk	Deprived of 49 % of its fat. Fined 1/- and costs.
799—	" 15th ...	Milk	Adulterated with 4 % of water, and deprived of 8 % of its fat. Cautioned by Health Sub-Committee.

In the Table below will be seen the total number of samples analysed, and the percentages of adulteration in various classes of articles in each of the last 19 years :—

Years.	Number of Samples Analysed.	Total Percentage of Adulteration	Percentage of Adulteration of undermentioned Articles.								
			Milk.	Bread and Flour.	Butter.	Groceries.	Wines.	Beer.	Spirits.	Drugs.	Other Articles
1873	87	65	75	0	0	87	—	—	—	100	10
1874	79	42	67	0	66	16	—	0	100	—	—
1875	73	38	55	0	—	36	100	—	—	25	—
1876	92	33	30	—	—	19	—	33	25	36	60
1877	176	40	58	0	—	12	—	21	36	26	31
1878	158	21	57	0	0	10	0	13	26	—	—
1879	168	25	60	0	0	5	—	16	—	—	0
1880	178	21	46	0	0	0	—	0	—	—	0
1881	197	23	54	0	36	8	—	0	50	0	0
1882	321	18	36	0	25	10	—	0	—	—	0
1883	151	38	47	0	30	42	100	17	29	100	—
1884	816	21	41	1	40	23	—	0	40	21	0
1885	914	13	24	0	40	22	—	2	0	7	0
1886	876	9	18	0	23	10	—	6	20	—	0
1887	818	12	15	0	52	12	—	1	0	0	40
1888	753	11	18	0	20	8	—	14	0	0	23
1889	873	16	19	2	32	14	0	6	0	16	27
1890	927	13	22	0	14	6	—	4	—	19	0
1891	811	11	18	0	23	0	—	6	33	7	22

Percentages of Adulteration.

Only 90, or 11 per cent., of the samples analysed last year proved to be adulterated. The percentage of adulteration, as may be seen from the preceding Table, has only once been lower than in the past year.

Milk.

The samples of Milk analysed numbered 295 ; 53 of them, or 18 per cent., had been tampered with. Of these 53 samples, 28 had been watered, 15 had been skimmed, and 10 had been both watered and skimmed. In addition to these samples, nine others were of very poor quality, and had probably been slightly adulterated ; the same remark applies also to the single sample of cream analysed.

Butter. Out of 115 samples sold as Butter, 26 were found to be margarine. This number does not include the four samples previously mentioned, which were declared to be margarine, but which had no labels attached to them.

Whiskey Water had been added to four samples of Whiskey in such quantity as to reduce them to much lower than the minimum strength prescribed by law.

Three Ales contained an excess of salt, one Tincture of Benzoin was deficient of nearly half the requisite amount of alcohol, one Tincture of Opium contained only 44 per cent. of the proper ingredients, and one sample of Raspberry Jam had been artificially coloured, while one of Tinned Apricots contained a little tin.

I remain,

Mr. Chairman and Gentlemen,

Your obedient servant,

ALFRED HILL, M.D., F.I.C.,

City Analyst.

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